Aalto University
School of Business

HAS THE DIGITALISATION OF THE LEISURE AIR TRAVEL SEARCH INDUSTRY BEEN ENABLED BY THE CHARACTERISTICS OF MULTI-SIDED PLATFORMS (MSPs)?

Master's Thesis

Antti Silvennoinen
Aalto University School of Business
Information and Service Management

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Author Antti Silvennoinen

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Abstract

The air travel industry has been a front-runner in the development and adoption of new technologies in the past half century. The entry of metasearch companies into the leisure air travel search industry has changed the dynamic of consumer search completely. These metasearch companies operate a multi-sided platform in which they provide end users a free service where they can search, compare and analyse all of the flight options available them. This research studies whether the distinctive characteristics of multi-sided platforms (MSPs) have been the key enablers for the leisure air travel search industry to go through digitalisation.

The main theoretical basis for this research was built from literature on platform technologies, with a focus on multi-sided platforms, and digitalisation. Based on past literature, a theoretical lens was developed, in order to identify the specific MSP characteristics that would used to analyse the upcoming data. A plan was created to conduct a qualitative study aimed at obtaining personal views and opinions on various themes regarding digitalisation in the leisure air travel search industry. The qualitative data was obtained utilizing both semi-structured interviews, as well as, written questionnaires, and the data received from the research was analysed in order to find similarities and themes regarding the research topics.

The key themes that were formed from the qualitative study were all analysed regarding why they were viewed as important factors within the industry and how they had an effect on the way that the industry has gone through its digitalisation. The themes that emerged were technological milestones, seamless communication, customer loyalty programs, knowing your customers, and ownership of data. Each theme was also analysed in connection to the research question, in order to get overall conclusions for the study.

Generally, the results from the study reflected well the existing literature on areas such as the benefits of using multi-sided platforms, the utilisation of customer loyalty programs, and the ability to successfully utilise customer data. In addition, the study provided great insight on the importance for a company to know ones customer and having the ability to recognize and adapt to changing customer demands. This study provides a good basis for further research on the topic, which could include a more extensive study from the consumer side, on what they value the most during the search phase of their leisure flights, and how they see the developments within the industry have changed their entire user experience.

Keywords Digitalisation, MSPs, leisure air travel search industry, metasearch, user experience

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1. Introduction

The objective of this thesis is to investigate whether the distinctive characteristics of a multi-sided platform (MSP) have had a key role for companies in the leisure air travel search industry while going through their digitalisation process. This first section of the thesis will create an overview on the topic by introducing relevant background information, presenting the goals and the research question for the study and, finally, explains the problem space that the research addresses and what has been left out of the scope.

1.1. Background

The ability to conduct online business through digital means, such as the searching and purchasing of a consumer good through an Internet sales portal or platform, has increased its importance in business in the recent past. Globally, the number of people with access to the Internet has reached an unprecedented number, with the number of global Internet users reaching over 3 billion, and thus, the global Internet penetration reaching 40% for the first time in 2014 (Appendix 1). This makes it vital for companies to be able to adapt their businesses to fulfil the evolving online consumer demands. The importance of digitalisation for consumer directed companies has been vastly studied creating a consensus about the benefits that arise from transforming business practices, products or services from traditional physical format into the digital world (eg. Pitt, Berthon & Berthon (1999); Fitzgerald, Kruschwitz, Bonnet, & Welch (2013); Gangualy (2015)).

The adoption of digital business practices has been evident in the air travel industry also, an industry in which total yearly revenues for commercial airlines worldwide have generated over USD 700bn over the past 4 years (Appendix 2). The airline industry was a front-runner in the early adoption of new information communication technology (ICT) innovations, starting in the 1950's with such inventions as the developments of the Computer Reservation System (CRS) and Global Distribution System (GDS) networks, which will be introduced later on in the study. The companies competing in the industry have continued to successfully identify and integrate new ICTs into their business practices. This has led to various researches being conducted on the evolutions of the digital capabilities in the air travel industry (eg. Copeland and Mckenney (1988); Chen (2007); Buhalis (2014)).

In 2015, 89% of marketers and business leaders surveyed by Gartner believed that by 2017 customer experience will be the primary basis for competition in consumer-oriented industry (McCall, 2015). This is largely due to the evolving consumer demands and changing consumer behaviours that have emerged within contemporary consumers, because of the availability of instantaneous product and price information, as well as, a wider variety of sales and service providers. This has created the need to be able to provide more customized and personalised user experiences. The importance of customer experience has also risen in the leisure air travel industry as price-competition has become less viable for traditional airlines, and so, they have had to adopt new business practices, as well as, creating new partnerships with companies excelling in data and information analysis.

The developments in digital platform technology have created the demand, especially in the consumer product and service industries, for companies to transform their businesses towards platform models. This is reflected well in the fact that in the year 2014 16 of the top 25 brands in the world operated some form of multi-sided platform (referred to hereafter as MSP) (Taube, 2014). Even though there are various companies within the leisure air travel industry that operate on a purely MSP format, such as SkyScanner and Qunar, there has not been substantial research done on the way that the characteristics of these MSPs have had on the digitalisation of the entire industry, and in particular, the section of the industry that handles the searching phase of the leisure flight booking.

1.2. Setting the Scene

These days, the leisure air travel search industry is dominated by companies that provide their services primarily online. However, it is important to understand that before the introduction of the Internet, and consequently the vast possibilities that it enabled for the various players within the leisure travel search industry, the industry essentially was comprised of three key components: the suppliers, the intermediaries, and the end-consumers (Buhalis and Zoge, 2007). The airlines were the suppliers of the product and they could either sell directly to the end-consumers or use an intermediary to distribute their product onward. These intermediaries were categorized into three different types: outbound travel agencies (OTAs), inbound travel agents or handling agencies (ITAs) and tour operators (TOs) (Buhalis and Laws, 2001). As noted in Bloch

& Segev (1997), these intermediaries traditionally played three roles: "Information brokers to pass information from product suppliers to customers, transaction processors to print ticket or forward money, and advisors to provide added-value information to their customers, assisting them in their choice of specific products and destinations" (*ibid, pg. 55*).

These intermediaries had the opportunity to utilise various support technologies, the two most important being the Customer Reservation Systems (CRSs) and the Global Distribution Systems (GDSs) (Buhalis, 2004; Kärcher, 1996). The initial introduction of the CRSs were in the late 1950s, and were first developed so that companies could store, manage and distribute their own data to make their daily operations more efficient (Farhoomand, 2000). However, in 1962, American Airlines introduced the first notable system, SABRE CRS, which initially functioned as a controlling system for their inventory but soon evolved to a system that allowed them to improve their internal processes as well as communicate more efficiently with various distributors and update the required information on routes, seat availability and flight pricing (Buhalis, 2004). The introduction of these electronic CRSs eliminated many activities and time delays that were previously present due to the lack of up-to-date inventory data and information on the availability of certain flights. Also, they eliminated the purely physical actions done by the agents who were taking in reservations for flights; for example, an available seat on a certain flight needed to be confirmed manually, usually via telephone, from the airport of departure and then pinned as reserved upon a display board within the reservation offices (Copeland and Mckenney, 1988). These developments essentially made the process of reserving a flight easier and less time consuming for the end consumers, as they would be provided with the latest availability and pricing information about their desired flights.

The development of the far more comprehensive GDSs were the result of large market pressures from airlines, travel agencies and end consumers to be able to access more comprehensive information. This lead to the CRSs to act as the operational interface at the travel agency end of the transactions that could send and receive information to and from the vastly connected GDSs. The early development of the GDS technologies can be seen in Appendix 3 (Appendix 3). Large majority of the airlines within the leisure air travel industry are using the large GDS's, such as Amadeus, Galileo, Sabre, and Worldspan, and thus, the available information infrastructure is quite similar to them all.

1.2.1. Key Definitions

There are certain key terms and abbreviations that are used frequently in this thesis, which the reader should understand in order to comprehend the text better. The following list provides these terms and abbreviations with the corresponding definitions:

- Platform = *a platform business* = A platform business is simply a medium which lets others connect to it. (http://thecge.net/category/research/the-emerging-platform-economy/)
- MSP = *Multi-sided platform* = An MSP brings together two or more distinct but interdependent groups of customers. Such platforms are of value to one group of customers only if the other groups if customers are also present. The platform creates value by facilitating interactions between the different groups. (https://divergence.academy/what-is-a-multi-sided-platform/)
- OTA = *Online travel agency* - An OTA is a travel website that specializes in the sale of travel products to consumers. (https://www.rezgo.com/glossary/ota)
- LCC = *Low-Cost Carriers* (or budget airlines or no-frills airlines) – Airlines that uses charter and/or scheduled flights to offer bargain-basement fares. (http://www.businessdictionary.com/definition/budget-airline.html)
- CRS = *Computer Reservation System* - Any of several proprietary computer systems allowing real-time access to airline fares, schedules, and seating availability and offering the capability of booking reservations and generating tickets. (http://www.travel-industry-dictionary.com/computerized-reservation-system.html)
- GDS = *Global Distribution System* = A computer reservation system, typically owned jointly by airlines in different countries, that includes reservation databases of suppliers in many countries. (http://www.travel-industry-dictionary.com/global-distribution-system.html)
- ICT = *Information and Communication Technologies* = ICT refers to technologies that provide access to information through telecommunications. (https://techterms.com/definition/ict)

1.3. Goals and Research Questions of the Research Paper

The goal of this thesis is to investigate whether the distinctive characteristics of a multi-sided platform (MSP) have been the key enabler for the leisure air travel search industry to go through their digitalisation process. For this study, the definition of digitalisation used is that ”it is the use of digital technologies to change a business model and provide new revenue and value-producing opportunities; it is the process of moving to a digital business” (Gartner, 2017). In addition, the digitalisation process entails the introduction of digital processes in order to eliminate more time and resource consuming physical activities.

As the developments in ICT have become more advanced and accessible to end consumers, it has created an environment where consumers are more demanding in regards to the level of services they get. Consumers have become accustomed to getting high quality information instantaneously and so it has created a necessity for companies to be able to communicate with their end customers seamlessly. The entrance of MSPs into the leisure air travel industry has brought more transparency in regards to flight information, as they are able to provide up to date information on routes, flight times, and especially, the current ticket prices. As the MSPs act as pure facilitators in the transactions between the marketers, mainly airline companies and OTAs, and the end consumers, their aim is to be as efficient in the transfer of up to date information. This change in the industry has created a need for airline companies to be able to utilise the benefits that these MSPs bring to them, especially taking into consideration the defining characteristics that these platforms have, in order to bring better services to their own customers.

This research problem has led to the formulation of the specific research question that the author wishes to analyse, and it goes as following:

Has digitalisation of the leisure air travel search industry been enabled by the characteristics of multi-sided platforms?
- If yes, how?
- If no, why not?

1.4. The Scope of the Research

This study was done mostly focusing on the search phase of the leisure air travel ticket booking process, and so, it does not give a holistic view on the leisure air travel industry. This was because analysing all of the functions within the leisure air travel industry would have too many variables to consider. I believe that the influence that the metasearch engines have had on the search phase of the entire industry, and in particular, the benefits that the specific characteristics of these MSPs bring to the end consumers as well as the companies involved, allow for an interesting research topic.

In the qualitative research phase of the study, I limited the participants to five (5) large players, which operate within the European market. I feel that they represent a substantial section of the market, and so, can provide an adequate sample size for the purpose of this study. Even though the context is set mainly in Europe, all of the companies represented are global players, with a significant portion of their business conducted globally.

As some of the metasearch companies wished to remain anonymous, it made sense for continuity sake to make all of the MSP responses anonymous. This limited the amount of information that could be presented to the reader about the actual company, and so, gives the reader a less comprehensive view of the companies involved.

It is important to note that the introduction of the Low-Cost Carriers (LCCs), also known as “no-frills airlines” or “budget airlines”, who compete purely on the price level, had a very large impact on the way that major airlines had to adapt and change their business models to focus more on added-value products and services. However, due to the completely different type of business models and value creation approaches by these LCCs, their inclusion in the analysis of the developments in the leisure air travel search industry has been omitted to keep the focus on the more traditional airlines.

2. Literature Review

The aim of this section of the research paper is to combine and evaluate the existing literature that has already been written about the topics at hand. The main topics to be analysed are the phenomenon of digitalisation, the concept of platforms and the various forms, functions, and issues surrounding the topic. In order to keep the reader focused on the leisure air travel search industry throughout this study, there will be numerous important technological milestones presented as examples for the general phenomenon introduced in the theory. Even though there is brief introduction of some of the older technological advancements that laid the foundations of the industry, a more focused analysis will be based on innovations done in the past 30 years or so. The existing literature introduced have been selected to correspond to the research problem at hand. *For the purpose of the study, the main analysis within the platform section will be based on the multi-sided platforms (MSPs).*

2.1. The Digitalisation Process and Its Potential

The following section will introduce the concept of digitalisation, the importance of technological advancements towards the future of consumer business, and some of the challenges that companies need to take into consideration while evaluating their digitalisation process. This information is brought forward in order for the reader to understand the idea of digitalisation and the key elements that companies need to take into consideration throughout their business activities in order to fully utilise the technological potential available to them. In addition, there will be various real-life examples for the phenomena introduced, in order for the reader to understand better the context of the study. By understanding the concepts introduced here, the reader will better understand the results from the qualitative research, as well as, the analysis and proposals in the Discussion.

Ganguly (2015) rightly states that "in a technology driven economy, technology plays the role of differentiating factor between mediocrity to superiority in terms of value creation, competitiveness and sustainability". As the global business environment has become increasingly competitive and as the global consumers are becoming more conscious and particular about their consumer demands, companies need to realize and

utilise the potential that technology can bring to their business in order to successfully grow and compete. In order for a company to successfully transform their business model from a physical to a digital one, they must review the various issues revolving around the concept of digital transformation, also referred to as digitalisation. The digitalisation process became apparent ever since the introduction of the first personal computer designed for mass consumer use in 1981, the IBM Personal Computer (IBM, 2016), but the vast advances in information and communication technology (ICT) in the past few decades have accelerated this phenomenon in many industries. In essence, the concept of digitalisation refers to the transition of conducting business activities in a traditional way to conducting them in a digital way (BarNir, Gallaugher, and Auger, 2003); and as Negroponte (1995) put it, "a transformation from atoms to bits".

The relatively recent trend has been for companies to digitalise their business activities in order to meet internal and external demand, and increase the utilization of their resources. As suggested by Fitzgerald, Kruschwitz, Bonnet, & Welch (2013), the effective management of digital technology can lead to companies gaining: "better customer experiences and engagement, streamlined operations and new lines of business or business models" (Fitzgerald et al., pp. 5). In essence, the general goal is to increase efficiency while cutting costs.

2.1.1. Technological Factors Enabling Digitalisation

It is apparent (eg. Amit and Zott, 2001) that the vast improvements in technological capabilities in the past few decades have created new possibilities for companies to create value. Three essential technological factors that have enabled digitalisation to occur are memory, networks, and ubiquitous connectivity (Heiskala, 2014). These three factors are further explained below with established theory.

In regards to the memory factor, as Gordon E. Moore predicted already in 1965 (Courtland, 2015), the amount of transistors in a dense integrated circuit has approximately doubled every couple of years since the invention of the integrated circuit, meaning that the storing capacity for digital data has increased while the physical size required to store the data has become smaller (Moore, 1998). Moore (1998) also predicted correctly that the relative manufacturing costs of creating digital storage space would become cheaper. These improvements have allowed companies to

create more efficient solutions and products for their end-customers. In addition, the improvements in technological flexibility have allowed digital memory to be utilised in various ways, for example, creating the possibility for users to rewrite and reprogram memory devices to their personal need, as well as, have the ability to transfer memory from one device to another (Yoo, Henfridsson, and Lyytinen, 2010)

Improvements in network technologies have had profound impacts on data transferring. Essentially, the evolution of networks going from purely physical ones to wireless ones, has allowed the speed of data transference to increase vastly in both short- and long-distance networks (Fischer, Goeldner, and Huang, 1991). Along with the increased bandwidth capacities, this allows for a more substantial information exchange between companies, the suppliers, and their customers. A good example of this is the impact of the Internet onto the leisure air travel search industry as the evolution of the Internet and its adoption into consumer markets had a vast influence the way that consumer could search for leisure air travel. As suggested in Pitt, Berthon & Berthon (1999), the Internet essentially eliminated the 'location' and 'distance' factors from the consumers' flight search and purchasing processes as it allowed consumers to interact with the suppliers regardless of their respective locations or the distance between them.

Buhalis and Zoge (2007) suggest that the increase in market transparency and competition intensity brought on by the Internet caused some disintermediation within the industry, reducing the number of possible intermediaries involved in the search and booking process of leisure flight tickets, leading to reduced transaction costs. The authors also argue, that this lead to an increase in the customers' bargaining power as they were no longer dependent on one particular seller, but rather had the easy option of searching through various intermediaries. The Internet's increased usage in this industry altered the barriers to entry into the market, and thus, minimised the switching costs for consumers (Kim, Nam, and Stimpert, 2004). Initially, this reflected as a decrease in the bargaining power of the sellers as there was more competition within the market (Buhalis and Zoge, 2007). However, the evolution of the Internet, once utilised efficiently, also gave the suppliers new bargaining power as they could communicate with their customers directly and create new partnerships opportunities with numerous associates within the industry (*ibid, pg. 482).* However, it was also apparent that the new capabilities introduced by the Internet lead to some 'reintermediation' in the form of new online travel intermediaries, such as Expedia

(*ibid*, pg. 483), which is discussed more in depth further on in this section.

The growing phenomenon of ubiquitous connectivity has created new kinds of demand, especially for companies that target young consumers. The increasing number of mobile devices that are connected to the Internet, and thus to each other, has allowed companies to be in contact with their customers instantaneously and without geographical limitation (Weiser and Gold, 1999). The contemporary consumer has become accustomed to instantaneous services and information availability, which has created a pressure for consumer goods companies to provide this to their customers in order to stay competitive (Manhas and Tukamushaba, 2015). This evolution of mobile technology and mobile networks has also had a substantial impact on the way that the suppliers of air travel search possibilities are able to create services that cater the needs of their targeted customers. On the other hand, they have also created new channels and opportunities for the buyers to search and book their desired air travel tickets. On the supplier side, the service providers are able to communicate with and contact their customers instantaneously through various mobile applications and online services. This increases the possibility for the suppliers to provide their customers with a more personalized user experience, as they can customize the way that they contact their customers, as well as, the content that they wish to expose to the particular customer (Neuhofer, Buhalis, and Ladkin, 2014). On the buyer side, the increased availability of high powered and connected mobile devices, especially smart phones, has allowed for air travellers to capture and share their experiences, and search and solve various problems associated with the leisure air travel search process (Wang, Park, and Fesenmaier, 2012).

The increased efficiency in technology utilisation has also resulted in vast cost savings. Incorporating the technological enablers from the previous section, an example for these cost savings would be the utilisation of a smartphone to purchase a consumer product straight from a company's web store. The customer can connect directly to the web store via the Internet using their personal smartphone, and decide and pay for their product instantly using a predefined payment method (credit card, PayPal, Internet banking, etc.). A valid example from the leisure air travel industry is when the increased usage of the e-tickets (electronic ticket) became an integrated part of airlines' attempts to create value-added experiences for their customers. As McCubbrey (1999) noted the introduction of the e-ticket eliminated the need for a paper ticket, as the e-ticket acted

purely as a reservation confirmation that was stored in the airline's own database. Important benefits that the use of e-tickets brought for the consumers was convenience and additional value to the customers' entire travel experience. However, the airlines used e-tickets also as a cost saving mechanism, as they could "reduce costs in labour, printing, shipping and accounting costs, and avoid commissions paid to the GDSs and agents" (Chen, 2007, pg. 110). The initial adoption of e-tickets by airlines was quite slow, as in the first 10 years since their inception in 1994, only 20% of all airline tickets sold globally were electronic. However, in 2004, the International Air Transport Association (IATA) created an industry wide, four-year target of having 100% of all tickets sold to be in electronic format, which was reportedly reached in time (IATA, 2016)

In contrast, companies must also recognize and overcome the challenges that may arise during the process of transforming a company's physical and manual business activities into digital form. One of the main issues that companies must address is the varying and changing wants and needs of their customer base (Manhas and Tukamushaba, 2015). The contemporary consumer has become increasingly tech savvy, and so has also become more demanding about the level of technological capabilities and services expected of companies. The increasing number of various devices and the level of sophistication in communication technology for the average consumer have resulted in the consumers becoming increasingly connected to one another, which in turn has made them more social and open about sharing their experiences of certain products or companies.

2.2. Theory of Platforms and Their Functions

The following section will introduce the theory behind platform technologies and the main functions that these platforms have. The theories regarding platform technologies that are most applied in this study are by Evans & Schmalensee (2008), Hagiu & Wright (2015) and Staykova & Damsgaard (2015). The functions that will be reviewed are the facilitation of information, communication and transactions between different user groups of the platforms, how these platforms can create value to the different user groups, and what type of effects the distinct user groups have on the other groups operating within the platform. This information is brought forward in order for the reader to understand the basic functionality of the platforms, and realise what kinds of benefits these platforms can bring to the different users within the platform. In addition, the reader will be able to visualise better the context of the study as there will be relatable real-life examples provided, with some also connected to the industry in question.

The concept of an economic platform has been around for centuries, but the features within the platforms and the ability to utilise the extensive possibilities of the platforms have evolved over time. Even though the clear distinction between the different types of platforms has been difficult to identify, Staykovska & Damsgaard (2015) suggest a categorization of these platforms into three simplified categories: 1) one-sided platforms, 2) strictly two-sided platforms (or two-sided markets, as often referred to), and 3) multi-sided platforms (MSPs), in which the platform has two or more identifiable and distinguishable user groups (Staykova and Damsgaard).

A one-sided platform/network refers to a platform, in which a company operates a platform where there is merely one type of user side. Each user has one specific purpose at each moment in time, yet still are able to alternate these roles with one another (Staykova and Damsgaard). A good example of a one-sided platform is the e-mail; during each interaction, one of the user sides will always be the sender and the other side will be receiver. Even though each user side will have only one particular role during a single interaction, these two roles are not set to always be the same, as the two sides may alternate these roles. For the purpose of this study, the relevance of one-sided markets is limited, and so, will not be discussed further in the thesis. However, it is relevant to understand that there is a possibility for the platforms to be developed from

one-sided to a more multi-sided platform model. For example, the development of these platforms can be seen in the evolution of the Facebook social media platform. Initially, Facebook provided a one-sided digital platform in which one distinct group of users could interact with one another, but since then, have evolved their platform to become multi-sided, as it now connects individual users, companies, advertisers, and third-party game content providers (Staykova and Damsgaard).

The early stages of a simple two-sided platform can be traced back to the simple concept of a village market place (Hagiu, 2014), where vendors can exhibit and sell their products or services to the potential customers. Essentially, in order for a two-sided market to function properly, there needs to be at least two sides to the platform, in which two separate groups of users can use the intermediary to interact and transact with one another (Caillaud and Jullien). More recent examples of two-sided platforms are shopping malls, in the physical world, and Apple's AppStore, in the digital world (Hagiu, 2014). The shopping mall developers need to be able to attract both vendors and shoppers into their platform in order for the entire operation to work. Similarly, the value of the AppStore platform comes from the simultaneously increasing number of application developers and application users within the platform.

Intermediaries in the Travel Industry

An example from the leisure air travel search industry is when the emergence of the web-based travel agencies or 'cybermediaries' (Sarkar, Butler, and Steinfeld, 1995) into the air travel search industry changed the whole dynamics of the industry. These new entrants were generally owned by organisations that were not traditionally associated with air travel, for example, the introduction of Microsoft's Expedia (Buhalis and Licata, 2002), which attracted other large companies to invest and become a part of the air travel industry. These services allowed the customers to make flight reservations from any PC with an Internet connection, and since they worked as their own entity, they promised the customers the lowest fares available for their desired flights, and also, avoided any direct contact with the airlines or traditional travel agencies during the search phase (Mccubbrey, 1999).

2.2.1. Multi-Sided Platforms (MSPs)

MSPs, on the other hand, can have more than merely two distinct groups of users who need to interact with each other through the platform. As suggested by Hagiu & Wright (2015), the key features that make MSPs distinctively different from other firms and intermediaries are that they "enable direct interactions between two or more distinct sides and each side is affiliated with the platform". Within these key features, the authors refer to the "direct interactions" as the transfer of control of the key terms of the interactions from the platform provider to the distinct sides of the interaction. Similarly, the "affiliation" refers to the necessity of each user to make distinct and conscious investments to the platform in order to be able to interact with the other users.

Hagiu & Wright (2015) also provide an argument for distinguishing between MSPs and vertically integrated (VI) firms. The distinction between these two approaches is whether the company controls the service provided from one side of the interaction to the other or whether there is direct interaction between the two sides (see Figure 1.) The authors argue that the decision between choosing an MSP approach vs. a VI approach is apparent for firms that operate in services, which cannot be purchased or resold, such as haircuts, consulting, or legal advice. The difference can be seen, for example, in a traditional taxi company (a VI approach), where the company itself is fully responsible and has full control for providing the service to its customers. On the contrary, the smartphone application Uber (an MSP approach), which allows its users to contact registered independent drivers through their fully owned and developed application for obtaining similar driving-services, transfers the responsibility and control for the level of service quality to the independent drivers.

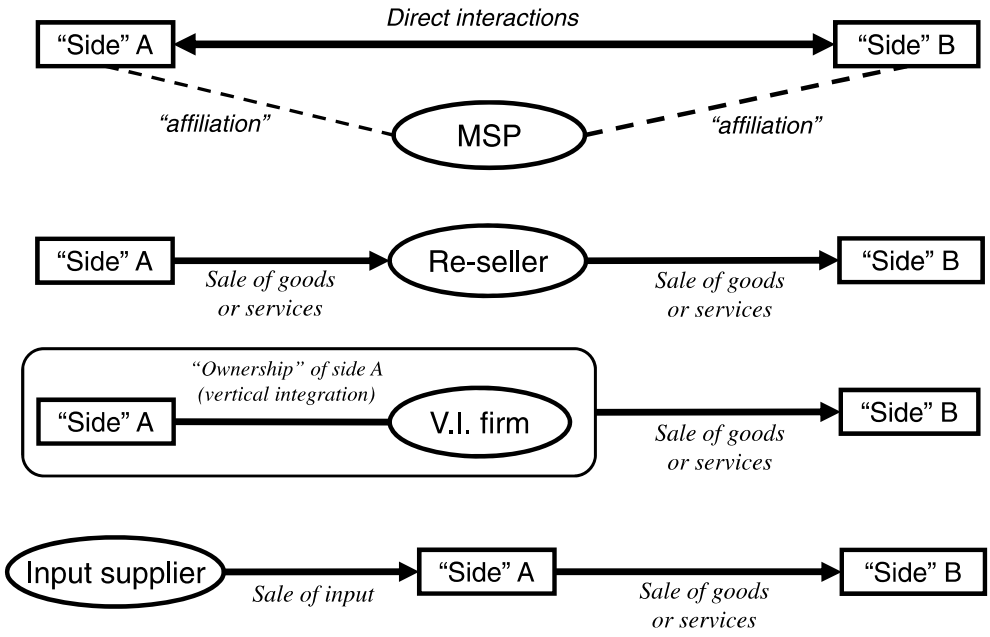


Figure 1. MSPs vs. Alternative Business Models

from Hagiu & Wright (2015) – Multi-Sided Platforms. International Journal of Industrial Organization

In the relatively recent past, the enhancements in information technology have allowed these platforms to go online and utilise the opportunities presented by the growing capacity and connectivity of the digital world. In essence, the functionality of the platform concept has not changed radically, but the way in which the platform providers can provide the service to their end users, and in turn, how the various users of the platform are able to utilise the platform have evolved immensely through the digitalization process of the platforms.

2.2.2. Creation of Value on MSPs

The main function of the MSPs is to connect different sides of a particular market and create the opportunity for the various sides to co-create value within the platform.

In Evans (2003), the author summarizes that in order for a platform to create social surplus, three specific conditions need to be true: (1) There are two or more distinct groups of users in the platform, with the possibility of these user groups being profoundly different from one another, such as airline companies (as sellers) and travellers (as buyers) for a metasearch flight engine, such as Momondo; or merely different for the purpose of the specific transaction, such as in a conversation through the instant messaging application WhatsApp, a person can be the sender of a message

on one occasion and the receiver of a message on another occasion. (2) There are certain externalities, which are further explained in the following section, associated with the different user groups of the platform becoming coordinated with one another. (3) The platform can facilitate the coordination more efficiently than having bi-lateral relationships with the different sides of the interaction. As Hagiu (2014) suggested, a very large part of the value brought on by MSPs to the various users within the platform is the reduction of search and transaction costs.

Network Effects

Rochet & Tirole (2003) argue that a market with two or more distinct sides, whose ultimate benefit comes from interacting with one another through a provided platform, creates network externalities. These network externalities are projected on a particular user side of the network, usually as a result of a change in the size or behaviour of a specific user side.

Katz & Shapiro (1985) argue the presence of a positive impact in the purchasing of certain products based on the consumption of the same product on the same user side of market. An early example of this was the purchase of a telephone: a person will effectively receive more utility from buying a telephone if there is a large amount of people already using the same telephone networks whom which they can contact. These network effects are referred to as direct, or same-side, network effects, as a change in the consumer base on one side of the network affects the utility of the other users on the same side. A more current example from the digitalized world would be the individual users of social networks, such as Facebook: The users will gain more utility out of using the social network if there are more people to whom they can connect.

In contrast, these same-side network effects may also appear negative within a network, suggesting that an increase in the amount of users on one side of a network will have a negative impact on the utility of the other users on that side (Eisenmann, Parker, and Alstyne). An example of this can be seen in the dating mobile application Tinder, which allows interactions between the different users of the application based on their gender preferences, as an increase on one particular user group side (eg. heterosexual males) will have a negative impact on the other users on that side as they will have more competition for receiving possible dates.

Eisenmann, Parker & Van Alstyne (Eisenmann, Parker, and Alstyne) also suggest that an increase in one side of a network will generally have a positive impact on the other side of the network, creating indirect, or cross-side, network effects. By utilizing the example of Facebook from the previous paragraph, an increase in the number of individual users on one side of the platform will attract corporate users and advertisers to enter the other side of the platform in order to convey their message and products to a wider audience.

Even though these cross-side network effects generally appear to be present in a positive manner in multi-sided networks, they can also be negative. For example, an increase in the number of advertisers on Facebook might have a negative impact on the amount of individual users present in the platform, as many may react negatively on the over exposure of advertisements (Hagiu, 2014).

Eisenmann, Parker & Van Alstyne (Eisenmann, Parker, and Alstyne) also refer to indirect network effects that have an impact on the consuming habits of certain products, suggesting that a purchase of a particular product could have an effect on the production of supplementary products on the other side of the network, and thus, reflecting back on the level of utility received from the initially purchased product. To explain these effects, Katz & Shapiro (1985) use the example of a consumer purchasing a personal computer, whom will be concerned about the number of similar hardware products that have already been sold, as this will have an impact on the amount of software products that will be developed for this particular type of hardware. Conversely, the more software products are available for a particular type of personal computer will increase the potential utility of buying said computer (Katz and Shapiro).

Figure 2 below illustrates the various network effects exerted on the different users within a multi-sided platform. The two different platform sides are represented by I and II. The same-side network effects are represented by 1 and 4, where as the cross-side network effects are represented by 2 and 3 (Staykova and Damsgaard).

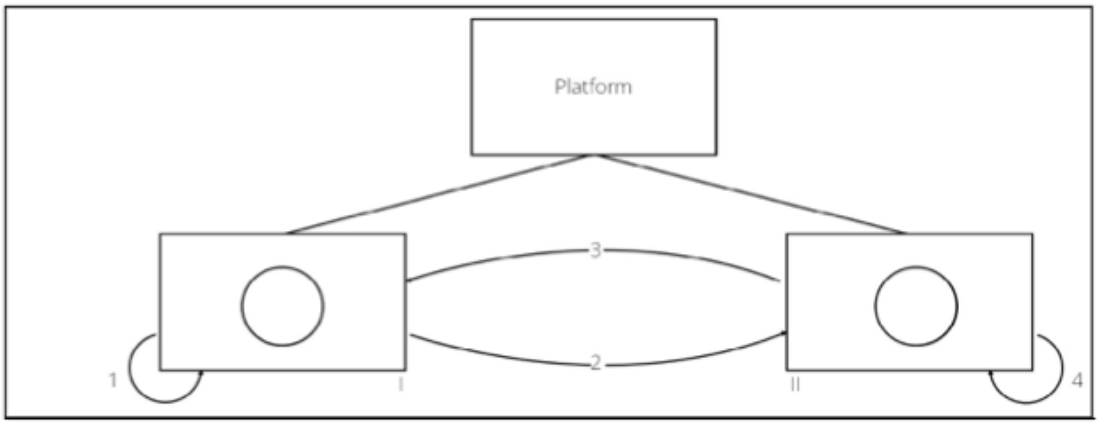


Figure 2 – Network Effects in Multi-Sided Platforms (MSPs) from Staykova & Damsgaard (2015) named "Figure 1. Two-Sided Platforms (MSPs)".

In order for a MSP to be successful, a company must be able to secure a substantial user base for the platform to be functional, and so, one of the main obstacles for companies operating a MSP is the process of attracting the various user sides to the platform. In essence, it comes down to understanding the entire user base of the platform in order to be able to make strategic decisions.

An important step in this process is establishing the pricing structure of the platform. Armstrong (Armstrong) argues that in order for a platform provider to be able to compete effectively on one side of the platform, they must also be able to perform efficiently on the other side, and so, they must create a service that sufficiently satisfies both types of users. Armstrong also argues that there are three essential factors that determine the pricing structure offered to the two groups:

1. **The relative size of cross-side externalities.** As defined in Armstrong (2006), "If a single member of group A of a platform has a profound impact on each member of group B, then the platform will target the users in group A" (*ibid, pg.668-669*). This phenomenon is evident in the pricing of nightclub entrance fees, as it is generally assumed that an increase in the amount of female customers will have a larger positive impact on the amount of male customers than vice versa, and thus, nightclubs provide female customers with free entrance to attract them, and consequently male customers, to the venue (*ibid, pg. 669*).

2. **Fixed fees or per-transaction charges.** A platform may charge its users a predetermined fixed fee for using the platform, creating the reality where the actual performance of the platform or the performance of the other side(s) of the platform won't be the determining factors for obtaining payments. However, a platform may also exert a payment structure where the amount paid to the platform provider strictly correlates with the performance of the other side of the platform. This can be seen, as presented in the example provided in Armstrong (2006), in the advertising costs for a television channel, where the provider could charge the advertisers an increasingly large amount of money, the larger the size of audience reached by the advertisement *(ibid, pg. 669)*.

3. **Single-homing or multi-homing.** A platform must consider whether its users are single-homing, meaning that they use solely one platform, or if they are multi-homing, and so using more than just one platform for the same purposes. As reviewed by Choudary (2015), this concept of multi-homing is very important in the context of MSPs as it is difficult to contain the constant competitive threat if a customer is able to exist on multiple platforms at any given time. The case of multi-homing is very evident in the leisure air travel search industry as the basic functions and services of the metasearch platforms are similar to one another, and so, the barrier for consumers to use more than one platform is very small.

In addition to the above-mentioned factors, an essential part in a platform provider's attempts to establishing their initial user base, and then consequently sustain growth in the overall amount of users within the platform, they must analyse which user side will be the one to generate revenue. Existing literature (for example, Armstrong, 2006) suggests that in order for a platform provider to reach a sufficient amount of user adoption on each side of their platform, at least one side of the platform must be subsidized monetarily. It has been suggested, that the side most likely to be subsidized will be the side that is least willing to pay for the usage of the platform (Economides and Katsamakas, 2006; Eisenmann et al., 2007), and thus, the platform providers must charge the other sides various expenses in order to successfully operate the platform. The decision to subsidize a certain user side, or sides, of the platform is also dependent on the way that this user side aims to gain value from the platform. To use Facebook

again as an example, the majority of individual users tend to gain value from the social interactions they can have with other users of the network and through the possibility of viewing, sharing, and commenting on various postings. However, for another user group of Facebook, such as the corporate advertisers, they want to have visibility within the social network in order to generate increased sales of their own products or services. And thus, it is this user side of the platform that have a larger incentive to financially invest in the usage and opportunities provided by the platform (Boudreau and Hagiu, 2008)

To summarize this section, it is vital for the reader to understand that the majority of the value that is being created through these platforms come from the interactions between the different user sides of the platform and the various network effects that they create. In addition, a key characteristic that makes platforms so appealing to users is the fact that they can they can facilitate the transactions between the different users very efficiently and effectively as they have the necessary infrastructure in place. Lastly, there are various factors that platform providers need to take into consideration in order to make viable pricing decisions; some of these include what type of externalities are present within the platform, which side of the platform to subsidize, and whether users have the option of substitute services.

3. Methodology

The aim of this section of the research paper is to introduce and familiarize the reader about the methods used to collect the empirical data for this research. There is also an introduction of the theoretical lens that is being used in this study, which is constructed from theory by Evans & Schmalensee (2008) and Hagiu (2006). This is the theoretical basis used in the development of the empirical section of the research, which is conducted in order to obtain ratification for the suggested research questions. There will be a justification on the choice of the particular research methods and an analysis on the compatibility of these methods towards answering the proposed research questions. This section will also introduce and justify the selected research sample used, and will describe how the empirical data was collected. There will be a brief description and justification for the kind of analysis that was done on the empirical data, and finally, this section concludes with a comment on the quality of the selected research methods and the quality of the attained results in terms of validity and reliability.

3.1. The Limitations of the Authors Involvement in the Study

In order to understand the context of the research better, it is essential to take into consideration the researcher's personal views towards the topic. Even though the topic of leisure air travel is close to the researcher's interests, he has no direct personal or occupational connection to the companies or employees being interviewed. He has no experience from the business side of the leisure air travel industry, but rather, is a keen member of the consumer side of the industry. He has lived in various countries throughout his life, and through this, travel has been a large part of his life from a very early age. As a young student traveller, the emergence of the price comparison websites has made travel planning much easier due to the vast increase in the availability in flight information and the introduction of various travel planning tools. The ability to plan trips according to specific criteria, such as price, length of stay, lengths of flight, length of layover, etc., has made the planning and execution of the researcher's personal trips both more efficient, as well as, more enjoyable.

Some biases that may need to be considered are that the researcher almost solely uses the metasearch flight comparison platforms once planning leisure trips, as the price and duration of flight tend to be the most important criteria in his decision process. As of now, the additional value created by the specialized services of OTAs, such as packaged deals with flights, car rental, and accommodation all bundled into one, do not bring additional value to the researcher, as he prefers to plan each section by himself to be more cost-efficient.

3.2. Theoretical Lens

The definition of multi-sided platforms in this research is based on the theory introduced by Evans and Schmalensee (Evans and Schmalensee, 2008; revisited in Evans and Schmalensee, 2013) that:

> "A multi-sided platform (which they call an *economic catalyst*), "has (a) two or more groups of customers; (b) who need each other in some way; (c) but who cannot capture the value from their mutual attraction on their own; and (d) rely on the catalyst to facilitate value-creating interactions between them." (*ibid, pg. 7)*

The first statement (a) has been omitted from research analysis as it is seen as a redundant form of evaluation in the matter. However, statements (b) and (c) create the basis for the hypothesis that the emergence of the various flight search companies, who operate as MSPs, have created the necessity for all players involved in the leisure air travel search industry to adapt their operating strategies in order for them to successfully capture value from their desired target consumer. Lastly, statement (d) introduces the idea that all players within this certain industry purely rely on the MSPs to facilitate the necessary interactions for each player to obtain their desired value and result. These three statements act as the theoretical basis for the research objectives of this study and help formulate particular questions and discussion points for the interviews.

For the analysis of the data obtained from the qualitative research, this paper will utilise the micro-founded framework introduced by Hagiu (2006), in which he establishes a

selection of characteristics that are true for all MSPs regardless of the industry they operate in. He states that:

> "*An MSP provides a support that facilitates interactions (or transactions) among the two or more constituents (sides) that it serves, such that members of one side are more likely to get on board the MSP when more members of another side do so." – Hagiu, 2006, pg. 3*

Based on this definition for all MSPs, he continues to theorize that:

> "At the *most fundamental level there are two types of basic functions that MSPs can perform: reducing search costs, incurred by the MSP's multiple constituents before transacting, and reducing shared costs, incurred during the transactions themselves. Any feature or functionality of an MSP falls into either of these two fundamental types." – Hagiu, 2006, pg. 5*

The author distinguishes that there may be different types of reduction in search costs depending on what kind of service the platform provides its users. A service in which both sides of the platform are searching for each other, the reduction in search costs are apparent for both user sides. The author (Hagiu, 2006 identifies eBay as an example, where both buyers and sellers are searching for each other. This phenomenon is also very evident in the context of the study, as on a flight metasearch platform the buyers (travelers) are searching for a particular flight, whereas the sellers (airlines) are searching for customers to buy their products. However, a platform may also reduce search costs for one side of the platform, all while creating a specified audience for the searching side. The author identifies TV advertising as a perfect example, as consumers view TV for the content shown, and in doing so, become a very attractive target for advertisers (ibid, pg. 5).

The questions and themes discussed in the qualitative data collection are based on the theories introduced by Hagiu (2006). The aim is to inquire whether there has been changes in the way that competitors within leisure air travel search industry conduct their business, and whether, these changes have correlations to the basic functions introduced in the theory above.

3.3. Research Methods

The use of the qualitative research paradigm for educational research purposes was adopted from initial theory that was based largely on cultural anthropology (Kirk and Miller, 1986). Locke, Spirduso, and Silverman (1987; revised 2013) theorized that the intent of qualitative research is to "understand a particular social situation, event, role, group, or interaction". It is quite fitting in this study, as the qualitative research aims to understand the role of the specified characteristics of MSPs towards the phenomenon of digitalisation within the leisure air travel search industry. This type of research approach is suitable for this study, as the research aims to inquire the personal views and opinions of the interviewees and respondents providing the data for the analysis. The use of case study research design was most suitable for this study, as it was necessary to acquire a selection of different perspectives from the industry in question, in order to get a better overview of the subject. This allowed the researcher to get first-hand knowledge from a variety of experts representing competing companies within the industry.

In order to justify the use of a qualitative research methods, it is necessary to identify some key characteristics that explain these methods. A number of authors, such as Creswell (2013), and Marshall and Rossman (2011), have identified various characteristics that need to be taken into consideration in this type of study. *The natural setting* aspect was invoked though the idea that whether the interview is conducted face-to-face at the interviewee's place of work or any other familiar setting, the idea is to keep the interviewee in a familiar and comfortable environment. Even though some of the answers were provided in written format, this also allowed the interviewee to respond to the questions in the setting of their choosing. For the interviews, *the researcher acts as the key instrument for collecting the interviews,* as this allows the researcher to adapt to the interview setting and make possible alternations to the interview questions based on the interviewees answers and the overall atmosphere of the interview. Similarly, in the written questionnaires sent to specific respondents, the researcher left open the possibility for follow-up questions if further clarification was required on some certain questions. The use of *multiple sources of data* is essential to the study, as the combination of interviews and qualitative questionnaires is used depending on the respondent's convenience, but also the use of Internet and article

based information is used for certain reinforcement for interview and questionnaire answers.

In order to get unbiased data, the *participants' meaning* is key, as for the purpose of the study, it is vital that the research questions and interview talking points allow for the interviewee to express their own opinions and thoughts about the selected topics, and not be influenced by the researchers own opinions or the previous literature written about the topic. It is also vital to note, that the study has an *emergent design*, meaning that the initial plan for the research may need to be altered as the researcher begins to partake on the empirical part of the research. This needs to be addressed in order to understand that the interview questions may change during an interview based on the answers provided by the interviewee. Similarly, the selection of companies and interviewees within these companies may change due to developments in the research problem. It is essential to understand that the research has been done as objectively as possible, and the personal views of the researcher in the study have had minimal influence on the way that the study has been conducted. In addition, the researcher has attempted to take *a holistic approach* to the topic and look at the problems and issues around the topic from the perspective of the different stakeholders involved.

3.4. Data Collection

The interviews for the representatives from **Finnair** were conducted at the Finnair offices in Vantaa, Finland. The interviews were done face-to-face and, a week before he interviews were conducted, the respondents were provided with a general set of topics that would be covered within the interview. The interviews were scheduled to last between 30-60 minutes each, and ended up being 50 minutes for *Emmi Teräs* and 36 minutes for *Meija Pöntinen*.

The initial contact to **Lufthansa** was done through LinkedIn, and the participant for the study, *Domenico Rotondaro*, was delegated through his superior. The correspondence with Mr. *Rotondaro*, and the provision of the written questionnaire, was done via e-mail. *See **Appendix 5** for full questionnaire provided to Mr. Rotondaro.*

I received the contact information for the representative from **Company X** from an acquaintance. The interview for the representative from Company X was conducted at

the Aalto University School of Business campus in Töölö, Helsinki. The interview was done face-to-face and a week before the interview was conducted, the respondent was provided with a general set of topics that would be covered within the interview. The interview was scheduled to last between 30-60 minutes and the duration was around 44 minutes.

I received the contact information for the representative from **Company Y** from an acquaintance. The correspondence with the representative from Company Y, and the provision of the written questionnaire, was done via e-mail. *See **Appendix 6** for the template used for full questionnaire provided to Company Y. Company A in questionnaire equals Company Y.*

The initial contact to the representatives from **Company Z** was done through LinkedIn, and once the representatives were aware of the study and were willing to participate, the rest of the communication was done via e-mail. *See **Appendix 6** for the template used for full questionnaire provided to representatives from Company X. Company A in questionnaire equals Company X.*

3.5. Data Analysis

The interviews in the qualitative research were recorded and were then transcribed into written format in order to make further analysis easier. The written answers for the questionnaires were analysed in the format they were sent to the researcher.

Each set of answers were categorized into the different subheadings that were handled throughout the data collection phase, and the key points for each subheading were set up in an Excel-sheet so that they could be compared more easily to the answers from the other respondents. Each key point was coded with a particular colour, depending on the message that the key point seemed to reflect. These key points were then analysed and compared to the key points of the other respondents in order to find similarities and differences in the answers. These similarities were collected and formed into common themes that are introduced further on in the Discussion section of this thesis.

4. Case Companies and Qualitative Data

This section of the thesis will introduce case companies that were involved in the qualitative research phase of the study. Firstly, there will be an analysis of the *two* airline companies that were involved in the study, and then, there will be an analysis of the *three* metasearch companies that participated. Each airline is introduced in order for the reader to better understand what kind of company is in question and provide some perspective on the subject. This will be followed by the qualitative data received from the interviews conducted with the interviewees and the questionnaires provided to the respondents. For the interviews and the questionnaires, there were three main topics that the questions and talking points were developed around: (1) the functionality of the search / reservation platform and the processes involved in the searching of flights in the respondents' company; (2) the company's position within their respective market and their cooperation with other players within the market; and lastly, (3) the respondents' views on the leisure air travel search industry on a more general level, mainly discussing major developments within the industry, what phenomenon have had a major impact on the way that the industry is today, and what kind of future threats and opportunities do the respondent's see within the industry.

4.1. Airline Industry

4.1.1. Finnair

Finnair is an airline company established in November 1923 (Finnair, 2016), and is a part of the Finnair Group, whose core business consists of airline business and travel service (Finnair, 2016). In 2015, Finnair's revenues amounted to 2,324 million euros and it had personnel of 4,817 at the year-end (ibid, pg 5). The airline business section of the company contributes to 91,1% of Finnair Group's revenue, with the passenger transportation, generating 82,6% of the portion. The State of Finland holds 55,8% of the company shares. Finnair is based in Helsinki, Finland, which gives them a geographical competitive advantage as they specialize in passenger and cargo traffic between Asia and Europe.

“Finnair’s vision is to provide its passengers with a unique Nordic experience, and its mission is to offer the smoothest, fastest connections in the northern hemisphere via Helsinki and the best network to the world from its home markets” (Finnair, pg. 5).

Finnair also own their own travel agency, Oy Aurinkomatkat – Suntours Ltd Ab, who provide travel booking and planning services. Established in 1963, Aurinkomatkat have created a stable market presence in the Finnish travel market, sending over 190 000 customers on holiday in 2015. During the same year, their market share in Finland for packaged holidays was 25,7% (Aurinkomatkat, 2016). Even though Aurinkomatkat do have physical sales points in Finland, the core of their business is operated through their website www.aurinkomatkat.fi, and so, can be considered partly an online travel agency (OTA).

Finnair is an ideal candidate for this study, as they are a significant competitor within the Finnish market and, historically, have been an organization that are seeking to utilise new technological advancements and adopting technological innovations into their business practices. A good example of this desire to pursue and utilise new technologies is the decision in 1999 (BusinessWire, 1999) to provide Wireless Application Protocol (WAP) services to their Finnair Plus key customers, in which they can access their loyalty accounts through mobile phones. During the first stage of the application release, the users could “access their accounts, check their Plus Point’s (Finnair’s frequent flier program), shop for products in the WAP Shop, get special offers, check flight schedules, and will soon book and change flights” (BusinessWire, 1999). Even though WAP technology has since been out dated, Finnair showed great market knowledge and intuition as during the late 1990’s, Finland had one of the highest mobile adaptation rates (Appendix 4) and a very high number of per-capita mobile phone users in the world, at over 70% (Hausmann, 2002).

The two interviewees whom participated in this study were both from the marketing department of Finnair. The first interviewee, Emmi Teräs, is responsible for the marketing activities in Asia as well as the development of Finnair’s digital marketing channels on a global level. She has the experience and competencies to answer the larger scale questions on Finnair’s strategic approaches to developing their own flight search platform, as well as, provide an established marketing perspective on customer

attraction and retention regarding the use of the platform. The other interviewee, Meija Pöntinen, works as a marketing consultant within the marketing team run by Emmi Teräs. Her responsibilities revolve more around the operational side of online search engines, and the relations with metasearch engines and display advertising. Thus, Meija is able to provide more information and insight on the operational side of the processes between Finnair and the various metasearch engines within the industry. Neither of these interviewees were directly involved with the marketing aspects of the Aurinkomatkat business, and so, the analysis on Finnair's own OTA has been left to a minimum.

Finnair's platform functionality

The platform in this analysis refers to the search and booking application that is available on Finnair's own website, referred to as the "reservation engine". This reservation engine is operated through the IT infrastructure of Amadeus IT Group, who specialise in providing IT capabilities for the global travel and tourism industry (Amadeus, 2016). Amadeus operates a passenger service system (PSS) which is being utilised by more than 100 airlines globally, allowing for wide spread and high speed information sharing between the connected airlines, to increase the efficiency of each airlines' own reservation engines (Amadeus, *Amadeus Press Kit, 2016*). Even though Finnair does not own the IT capabilities necessary to operate the reservation engine, they fully own all of the information that the engine provides as search results for its users. Based on the combination of a user's search queries, the reservation engine provides all of the variations available for the particular route; including variations in flight class, ability to change passenger name, cancellation options, additional in-flight entertainment and refreshments, options for connecting flights, and the ability to use Finnair's frequent flier miles.

In late 1995, Finnair opened their first website, which at the time was considered to have a very high standard of services in the airline industry (Finnair, 2016). Since then, many of the development projects on the website and the reservation engine have focused on the usability and flexibility aspects of the service.

An essential part of the reservation engine's functionality is the ability for the customer to be able to pay for the desired product conveniently, as:

> *"An integral part of Finnair's business plan is to receive the customer's payment information, most commonly their credit card information, early in the search process in the attempt to get the customer to commit to the product they are searching for."* – (Teräs, 2016)

The emergence of online banking services in Finland have allowed for an effective way for the customer to pay for their products through the Finnair website. Even though the online banking capabilities have been quite developed in Finland in the past decade, globally it has only recently become more available for consumers to utilise. For example, regarding payment methods in China:

> *"…it was last summer [2015] that the payment possibility for the Chinese Union Pay card, which is a payment card quite similar to our Debit cards, became possible [on the Finnair website]… in general, the more variety that we have in different payment methods, which are relevant to the local consumers, the more efficient the reservation engine on our website will be."* – (Teräs, 2016)

This improvement in payment methods creates a new opportunity for Finnair in the Chinese market, as the utilisation of Union Pay's online and mobile payment users, as of June 2015, was over 200 million (UnionPay, 2015).

A major challenge in the development of Finnair's reservation engine is the increasing trend of mobile device usage within the Finnish, and global, consumers. In addition, the differences in consumer preferences has brought a new challenge in the development of the reservation engine:

> *"…it [the reservation engine] has to work in different UX formats, meaning when you enter the website using your tablet it looks a little different, and when you use your smartphone it looks a little different…"*-- (Teräs, 2016)

In addition to the challenge of choosing what kind of visual aspects each user interface must have, the technological capabilities define what kind of functionalities the different user interfaces are able to uphold. The difference between a desktop interface and a mobile interface may vary quite a bit as:

> *"…[when you enter the Finnair website] it [the reservation engine] first asks where you are going, where you are coming from, and so on. Then you add your preferred dates and an interactive table comes with availabilities for +/- 3*

days with the respected prices, and once chosen it continues forward… when you look at our mobile website, all of these [functions] might be on the same page, because back in the day the mobile servers were much less reliable and when you went from one page to another, it didn't remember the information that you already had entered." – (Teräs, 2016)

In addition,

"…the sheer number of different types of devices and operating systems that a person can make online purchases with makes it challenging for Finnair to create the appropriate platforms to increase the user purchasing experience." – (Pöntinen, 2016)

Finnair's cooperation within the industry

The cooperation with airlines and search engines has changed drastically in the past few decades, along with the way that consumers overall search for their flights.

"…back in the early 2000's, when the role of search engines, in this case the search engines that lead traffic to Finnair's website, was still quite small… of course, the Internet was still in so-called children's shoes… by purely knowing the brand name, the consumers entered the website by simply typing the URL into the address bar… nowadays when there is much more flight price comparison, very few come to our website anymore by typing www.finnair.fi." – (Teräs, 2016)

This meant that airlines needed to invest more heavily in brand advertising on other media than the Internet, in order to increase the brand recognition within the industry.

Through the advancements in Internet capabilities and the development of searching tools, the entire search behaviour of consumers looking for leisure flight tickets has changed. Rather than visiting a particular airline website or using a search tool to search for a particular airline:

"…but rather they [the consumers] search for a flight between Amsterdam and Peking… and they end up in our reservation engine [on Finnair website] the necessary place of origin and destination information is already entered. All they have to do is enter their desired dates. And so, a lot of

automation has happened to try and make the customer's job easier". – (Teräs, 2016)

This has led to the importance of cooperation between airlines and online search tools, so that the visibility of the airline within the search tool is as high as possible, and that they are visible while using the correct search terms and phrases. Also, many of the metasearch engines receive their flight information, including price, duration, lay over details, etc., directly from the airlines' own reservation engines, and so, the technological capabilities and compatibility need to be up to standard in order for the metasearch engines to display the correct information to the person making the search query on their website (Pöntinen, 2016)

Finnair, metasearch engines and OTAs

There are two major ways that Finnair can utilise metasearch engines in a business manner; for the utilization of the metasearch itself and for advertising purposes (Teräs, 2016; Pöntinen, 2016). On the metasearch side, the two most common ways of pricing are cost per action (CPA) and cost per mille (CPM) pricing structures. In CPA pricing:

> *"…the airline pays a [predetermined] commission to the metasearch provider once the integrated system detects that a customer has made a purchase from Finnair as a result of a search result on the metasearch website and the consequential redirection to Finnair's own reservation engine."* - (Teräs, 2016)

In CPM pricing, Finnair pays a predetermined amount of money based on each 1000 impressions, meaning:

> *"…they [metasearch engine] show our product on their website, for example, a thousand times and we pay a certain amount of money for that."* - (Teräs, 2016)

In addition to this type of brand exposure, Finnair are able to pay for display advertising spots on the metasearch website. This allows for Finnair's advertising banners to be exposed when a person from a particular part of the world, as identified by the IP address, is searching for flights. For example:

> *"…when a person from Northern Europe is looking for flights to Asia, it is in Finnair's best interest to be as visible as possible, as one of their core competitive advantages is the utilization of Helsinki airport's geographical*

location and efficiency in connecting European travelers to flights towards Asia" - (Pöntinen, 2016).

And the message Finnair wishes to project to the leisure air travel market within Northern Europe is that:

> *"…Helsinki-Vantaa is the most convenient and efficient airport to use while traveling to Asia, and Finnair is the most logical and convenient airline to use in combination with the routing"* - (Pöntinen, 2016).

Another important channel for Finnair gaining customers is the paid advertising spots in larger search engines, such as Google and Baidu.

> *"With paid advertising, Finnair are able to position themselves at the top of the search results whenever a user makes a search using certain search terms."* (Teräs, 2016)
>
> *"For strategic purposes, it is very important for Finnair to invest in their visibility in search engines and metasearch websites that are popular in China, as it is one of Finnair's top target markets for the future."* - (Pöntinen, 2016).

In relation to OTAs, Finnair pays a predetermined commission for each flight that is reserved and bought through the OTA. The large difference between metasearch websites and OTAs from Finnair's perspective is that in metasearch websites, Finnair needs to be more strategic with the placements of their banners and display advertising, whereas in OTAs, the packaged deals are generally marketed through the agencies themselves and are determined by a variety of factors, such as price, length of flight, number of layovers, etc.

Finnair's change in business approach

As the consumers within the leisure air travel market have become more tech savvy and price conscious, Finnair has had to develop their approach to providing additional value to their customers in order to retain them. Also,

> *"…the introduction of LCCs, such as EasyJet, Ryanair, and Norwegian, has decreased the profit margin in the leisure airline industry… as we [the airlines] get a smaller share of profit from the actual sale of the ticket, it has*

increased the importance for Finnair to differentiate themselves from competitors through additional services and products." - (Teräs, 2016).

An important part of this strategy is the development of the customer loyalty program, Finnair Plus and…

> *"…developments in information and communication technologies has made it easier for Finnair to communicate with their loyalty customers and provide them with additional services."* – (Pöntinen, 2016)

In addition, improvements in analytical capabilities has allowed Finnair to know their customers better and through this increase the level of personalization and customization in their products and services.

> *"In essence, it is vital for Finnair to create a reservation process that minimizes all of the unnecessary inconveniencies and complications within the customer's user experience, because consumers have become accustomed to receiving quick and reliable functionality*." - (Teräs, 2016)

This is especially important for Finnair's Finnish customers,

> *"…as Finnish consumer only call the customer service if there is really a problem… good customer service [for Finnish consumers] is if they can do everything easily and by themselves online… for example, self-check-in via SMS or online is regarded highly within Finnish customers."* - (Teräs, 2016).
>
> *"…Finnish consumers are becoming ever more comfortable purchasing items online, and the barrier to buy additional services or products for each flights becomes smaller once the customer can browse through them online, rather than while being physically present with a customer service person."* – (Pöntinen, 2016)

It was worth noting that understanding market developments and, especially, the consumers in developing markets is also important for Finnair, who are aiming to make strides in markets, such as China as…

> *"…the rising middle-class in China creates new demand for business and premium type ticket classes, and allows for us to promote to that particular consumer base"*. – (Teräs, 2016)

The Helsinki-Vantaa airport has become a very integral part of Finnair's marketing and business planning, as the level of efficiency and services provided within the airport correlate to Finnair's customers' travel experience.

> "*Finnair market the fact that the entire transfer process at the Helsinki-Vantaa airport is very painless, as the transfer times are short and the services available to all customers are of high quality*." - (Pöntinen, 2016).

> *"Along with the airport's high efficiency, Finnair aim to communicate the fact that they are one of the most punctual airlines in the world, which helps to promote an easy and comfortable travel experience."* - (Pöntinen, 2016).

An important part of Finnair's approach towards better customer convenience and customer satisfaction is the availability of flexible flight tickets. For a predetermined additional cost, which is on average around 50 euros for a standard Finnair flight, the customer is able to purchase a ticket with which they the flexibility to change the dates of their flights.

> *"This option becomes very useful for travelers who are not absolutely set on exact dates for their flights, but rather know a time of year they wish to fly. Also, if a customer can't for some unexpected reason take the originally scheduled return flight from a destination, they have the option to change just the return flight to a more suitable time"* - (Teräs, 2016).

A customer who had purchased a normal flight ticket, and would for some reason miss their originally scheduled flight, they would need to purchase a completely new full-priced ticket.

Interviewees' perceptions on the leisure air travel search industry

Neither of the interviewees had deeper knowledge on the history of the leisure air travel industry, but both pinpointed the GDS' as vital innovations for the development of the entire industry. It was also mentioned that:

> *"…the GDS' were absolutely at the top level of technological innovations at the time of their launch, and created a stable base upon which the entire industry could develop."* - (Teräs, 2016).

One of the most important drivers for further innovation within the industry was identified to be the sheer increase in traveler volume within the past decade.

> *"For example, in 2015, Finnair reached 10 million flying customers, which is a 25% increase to the figures from 2010."* - (Teräs, 2016).
>
> *"The increase in volume has led to airlines needing to handle larger amounts of customer data, and so, has become more challenging to satisfy every ones needs."* - (Pöntinen, 2016).

The entry of LCCs has also created the necessity for traditional airlines to invest more in the customer experience throughout the whole process of searching and purchasing of flights tickets, as well as, the actual flying.

> *"The change [from price competition to customer experience optimization] has led to airlines needing to be able to communicate with their customers more effectively and more efficiently regarding the additional value that flying with their particular airline brings to the customer."* - (Teräs, 2016).

This added value can come in the form of easily flexible tickets, where the customer can, for example, upgrade the class of their ticket for a particular section of a journey to make their journey more comfortable; it can also come in the form of additional products or services that customers can buy and use during the flight (Teräs, 2016).

Both of the interviewees highlighted that investments in the development of mobile capabilities will be a key factor for future competition within the leisure air travel search industry:

> *"As consumers continue to use more mobile devices, the necessity for instant information and services through these devices will become ever more vital."* - (Teräs, 2016).
>
> *"…the increasing trend in mobile payments will become an essential part of the airline industry, as there have already been vast improvements in this field in other industries."* - (Pöntinen, 2016).
>
> *"For example, China's largest chat application, WeChat, provides its users with the ability to pay for purchases directly through the application."* - (Teräs, 2016; Russell, 2016).

As the leisure air travel search industry continues to become more competitive, a threat for airlines is that the metasearch websites might gain more bargaining power:

> *"...in the sense that they [the metasearch companies] can demand more commission for search results or charge more for display advertising, and so this could lead to the increase in prices of flight tickets"* - (Pöntinen, 2016).

Also, the possible abuse in power for metasearch engines and online search engines in general may have an impact on the airline industry on the whole.

> *"...in China, many airlines have started to boycott the country's largest and most popular online airline ticket booking website, Qunar, after numerous complaints from customers that Qunar are charging them inflated prices when purchasing through their website."* - (Pöntinen, 2016; Zhang, 2016).

However,

> *"...Qunar, along with some other metasearch engines, are creating new opportunities for themselves and their partner airlines through the introduction of so-called flagship stores within the search engines."* - (Teräs, 2016).

This flagship store becomes extremely useful once the customer searching for a particular route has decided upon a particular airline, for example Finnair, and proceed to purchase the ticket through the metasearch engine, the in-built flagship store within the metasearch engine will emerge with the specific outlook determined by the associated airline.

> *"This additional service is very beneficial for airlines as the outlook of the flagship store will be modified to the specifics determined by the particular airline, and so, the brand association won't be lost to the customer making the purchase. In addition, since the flagship stores are built upon the metasearch company's own platform, the customer making the purchase will also have the opportunity to pay with any of the payment options that the metasearch company have acquired. This is especially beneficial in markets, such as China, where the preferred payment methods for local consumers vary from the consuming habits of European consumers."* - (Teräs, 2016).

4.1.2. Lufthansa

Deutsche Lufthansa AG, or more commonly known as Lufthansa, is the largest airline company in Germany, and is a part of the Passenger Airlines Group owned by the Lufthansa Group. The Passenger Airline Group comprises the airlines Lufthansa Passenger Airlines (including Germanwings and Eurowings), SWISS and Austrian Airlines (Lufthansa, "Lufthansa / Company / Service / Lufthansa Group", 2016). The company was initially founded in 1926, but was dissolved by the Allies after World War II, and was newly founded in 1953 with the headquarters being established in Cologne, Germany. In 2015, Lufthansa Passenger Airlines' revenue was 17,944 million euros, carried some 79,3 million passengers, and employed roughly 40,000 staff (Appendix 7).

Lufthansa was a state-owned enterprise until 1994, but is now a publicly traded company with 74,9% (as of 21.12.2015) of its shared being held by German shareholders (Deutsche Lufthansa AG, pg. 10). Out of this shareholder base, 53,9% of the shares were held by institutional investors and 46,1% by private individuals. In comparison to the previous reporting year, 2014, the numbers were 60,3% and 39,7%, respectively (ibid, pg. 10).

Lufthansa is a great candidate for this study, as they are one of the largest passenger air travel carriers in the world and have a long history in global air travel. In addition, Lufthansa have made important technological developments that have positive effects on the whole industry, as well as, investing heavily on in-house technological and digital development projects. Lufthansa, along with Air France, Iberia and Scandinavian Airlines, founded Amadeus in 1987 (Amadeus, 2017) which reflects their understanding of the importance in technological advancements in the industry.
Lufthansa have also understood the importance of user experience, as they have made significant strides in utilizing market leaders in Internet user behavior, by teaming up with Google Flights in creating the function to "Book On Google". This function allows for users searching for flights through Google to book their flights within the Google user experience (Lufthansa, "Lufthansa Group Successfully Positions Distribution Strategy in the Market", 2016) while still having all the options and services that would be available to them through Lufthansa's own reservation engine and website.

The representative from Lufthansa who participated in the study was Dominico Rotondaro, whose title is Manager Global Digital Sales, and whose main responsibilities within the firm include:

> *"Performance Marketing topics such as Metasearch, Affiliate, Search Engine Optimization (SEO) and Search Engine Advertising (SEA)"* - (Rotondaro, 2016)

Due to the respondent's busy working schedule, he wished to provide his answers in written format. The written questionnaire, which was modified to fit Lufthansa in particular, was sent to the respondent via e-mail. Due to time constraints, the respondent also expressed that he was able to provide answers only on a "high level basis", but was willing to provide more detailed answers to some specific topics, based on questions sent to him after some evaluation of the initial answers.

Lufthansa's platform functionality

Lufthansa operate the English version of their own reservation engine through their own website http://www.lufthansa.com/de/en/Homepage. The functional and control aspects of the reservation engine are fully owned by Lufthansa, which is considered as essential in their strategy, as they consider customer traffic directly on their own website to be an integral part of their business.

> *"The process is controlled by Lufthansa and we have third parties which are involved in the process, e.g. a reporting agency which deals with all reporting relevant topics."* – (Rotondaro, 2016)

> *"…Direct traffic is of course a very important branch in the online world and therefore Lufthansa focuses on this channel primarily."* – (Rotondaro, 2016)

In order for Lufthansa to get traffic onto their own website and get customers to make searches and purchases through their own reservation engine, they use a variety of channels:

> *"We have several various contact points for the customer in order to reach Lufthansa.com… Besides direct traffic, we of course have SEO/SEA, metasearch engines and affiliate partners which offer an entry point."* – (Rotondaro, 2016)

Since the beginning of the millennium, Lufthansa have been very ambitious in utilizing information technology in order to develop their ebusiness strategy. In November 2000, Lufthansa created a vision of "eViation", which consisted of four concrete goals: "first, to expand online distribution channels and thus raise the share of revenues from online sales to 25 percent by 2005; second, to achieve the industry's highest levels of customer loyalty by means of exemplary customer data management and individualized services; third, to set new standards in product development by introducing "Internet on Board;" and fourth, to further decrease transaction costs and purchasing prices by using Internet platforms in a comprehensive manner." (Lufthansa, 2016). This need for innovation has continued to drive Lufthansa's ambitions in this field:

> *"Lufthansa is continuously developing and improving its flight search engine in terms of usability and digital innovations."* – (Rotondaro, 2016)

In addition to wanting to utilise new emerging technologies towards the development of their flight reservation engine, some customer and market data related reason were identified also:

> *"Usability aspects, customer behavior, technical improvements, security and fraud updates."* – (Rotondaro, 2016)

Lufthansa's change in business approach

The emergence of LCCs and the overall increase in competition within the leisure air travel industry, has created the need for Lufthansa to develop their business strategies:

> *"Traditional" airlines have to focus on their service quality. The customers nowadays expect more than a transport unit from A to B. Technology plays a very important role here. Starting from the user interface of the booking flow where the airline must be able to present its services to the customer to the after sales process in order to convince the customer in terms of loyalty."* – (Rotondaro, 2016)

Due to the fact that a large and traditional airline, such as Lufthansa, is not able to compete in price with the LCCs that operate globally, and especially within Europe, Lufthansa have had to increase their focus in some other areas in order to satisfy their customers. One essential aspect is top service quality:

> *"Lufthansa has improved in many ways in terms of service quality and furthermore has always been delivering high industry standard services.*

Lufthansa (LH.com) was given the best rating in a comparison test "Flight booking portals" by Stiftung Warentest, the leading consumer protection organization in Germany… Our entire Miles & More program is a leading loyalty program which offers many benefits for our customers." – (Rotondaro, 2016)

In an industry where there is so much competition, customer loyalty is key. In order to maintain their current customer base, Lufthansa use their customer loyalty program, Miles & More, as a key tool to increase customer satisfaction. In addition, Lufthansa can provide its customers with personalized information packaged based on their travel habits and preferences:

"Our marketing department provides a different set of newsletters to inform our customers about new offers and features Lufthansa offers." – (Rotondaro, 2016)

Also, Lufthansa are able to provide their customers with more personalized services through the use of analytics:

"For examples, Lufthansa analyses the keyword searches on all relevant search engines worldwide and creates landing pages for these purposes." – (Rotondaro, 2016)

Furthermore, all Lufthansa customers are able to access their flight information through the Lufthansa mobile application:

"For all customers who have booked a flight, our Lufthansa App informs our customers regarding any updates on their flight/journey, such as delays, gate changes, etc." – (Rotondaro, 2016)

The provision of ancillary services to their customers has become an important part of providing their customers with the best quality service as possible. Through their website, Lufthansa are able to provide various extra services to their customers:

"On our LH.com, we offer insurance, car rental, rail&fly, hotel accommodation, seat reservation and booking on hold." – (Rotondaro, 2016)

Some of these services, such as car rental and hotel accommodation, compete directly with the similar services that OTAs are able to provide their customers, and so, Lufthansa can also be present in these markets.

In addition to providing top quality service to their customers, Lufthansa have made strides in promising their customers best prices for their flights also:

> *"...Furthermore, we launched our "Best Fare Guarantee" in several markets to give our customer the confidence that we offer the best price for Lufthansa and Swiss flights on our home page."* – (Rotondaro, 2016)

> *"...2 years ago, we launched the new cabin class premium economy, which allows the customer to travel in a comfortable way without paying for services, which they may not need."* – (Rotondaro, 2016)

Lufthansa, metasearch engines, and OTAs

Even though Lufthansa's main focus is on attracting customers directly to their own website, they do recognize the necessity to have partnerships with various metasearch engines and OTAs. For metasearch engines:

> *"Lufthansa contracts as many metasearch partners as possible in order to be visible in as many markets as possible for the customer."* – (Rotondaro, 2016)

In order to receive the best results from each of their partnerships with metasearch engines, the metasearch engines provide Lufthansa with certain customer behavior related data, and vice versa:

> *"According to the contracts, Lufthansa exchanges [reports] with their partners (OTA and Metasearch business)"* – (Rotondaro, 2016)

Even though the emergence of metasearch engines has led to a new channel from which Lufthansa can gain customers onto their website, they also need to invest in other forms of visibility within the Internet:

> *"Many customers search on metasearch platforms (increasing tendency). In order to still be visible with Lufthansa.com we focus on many other channels with a redirect to Lufthansa.com, such as SEO/SEA, affiliate and metasearch of course)"* – (Rotondaro, 2016)

The key factor that metasearch engines have brought Lufthansa in regard to gaining additional value from customers is as follows:

> *"Metas provide important information in terms of search queries"* – (Rotondaro, 2016)

In contrast, the increase in available information and variety in selection through the emergence of metasearch engines has created the new expectations for travelers who make search queries for leisure flights on the Internet, as it was identified that:

> *"Customers expect transparency"* – (Rotondaro, 2016)

In essence, the respondent felt that the emergence of metasearch engines into the leisure air travel industry could be seen as both an opportunity and a threat for Lufthansa, and other airlines alike. As for the positive effects on the entire industry:

> *"It is definitely an opportunity. Metasearch partners advertise and claim to be transparent for the customer in terms of usability and price."* – (Rotondaro, 2016)

However, their emergence is also a challenge to Lufthansa, as:

> *"The importance of metasearch companies is growing and the competition is very high on these platforms… Lufthansa sees this as a challenge to prove its high quality standards."* – (Rotondaro, 2016)

In addition to the challenge of providing high quality standards, Lufthansa also has another challenge that smaller, more agile, companies might not have:

> *"Lufthansa being a multination company always has the challenge to adapt new technologies quickly."* – (Rotondaro, 2016)

The emergence of metasearch engines has clearly brought a new channel in which airlines can promote their flights, but when asked how this has affected the way that Lufthansa promote their products through other channels (such as events, street advertising, television, etc.), the respondent expressed:

> *"The metasearch business has not changed the way Lufthansa reaches their customers via other media. With the metasearch business, the customer has the possibility to check for several flight options on their own. This is boon and bane, at the same time, meaning that customers are confronted with many options and prices, which is a huge amount of [information]. So the costs may decrease, but it is very time consuming at the same time."* – (Rotondaro, 2016)

Interviewees' perceptions on the leisure air travel search industry

Once asked about the importance of various large-scale technological advancements towards the development of the leisure air travel industry, such as CRS, GDS,

development of the Internet, big data analytics, metasearch engines, mobile devices, etc., the respondent felt that:

> *"It is a combination of all that has [had] an impact on the industry. It is hard to point out one special category."* – (Rotondaro, 2016)

However, once asked about some specific consumer trends that have had a large impact on the way the flight search processes are today, the respondent clearly stated:

> *"... [the use of] metasearch engines and OTAs allows the consumer to search and compare flights online without any major hurdles."* – (Rotondaro, 2016)

The single most important benefits that the development of technological and digital capabilities have brought to the airlines was:

> *"Be there were the customer is."* – (Rotondaro, 2016)

And in contrast, the most important benefits that these have brought for the consumer / travelers has been:

> *"Transparency."* – (Rotondaro, 2016)

In addition to the transparency in ticket pricing and flight related information, the respondent expressed the following in regard to aspects that consumers value in the whole search process for leisure flights:

> "*Customers always want to find the best flight and sometimes the best flight is not the cheapest but rather the fastest without changing aircrafts. Customers also seek for a stress-free journey on a long-haul flight for affordable [price]."* – (Rotondaro, 2016)

When asked about the importance of the role that metasearch companies and OTAs have in the future development of the leisure air travel search industry, the respondent felt that:

> *"The importance of metasearch engines and OTAs will grow more and more… Both channels still have huge potential. I expect the metasearch companies to be more important due to their position of simply comparing OTAs and airline websites."* – (Rotondaro, 2016)

When comparing the differences between metasearch engines and OTAs, he also raised the valid point that:

"In this case, you will have to consider that many metas belong to OTA companies." – (Rotondaro, 2016)

The respondent had concise ideas as to what is the biggest opportunity for airlines in the near future within the leisure flight industry:

"Providing ancillary services." – (Rotondaro, 2016)

This reflects directly with the new practices, products, and services introduced by Lufthansa. In contrast, the single biggest threat that the respondent identified for airlines in the near future was:

"The lack of customer service." – (Rotondaro, 2016)

4.2. Metasearch Platform Providers

For the purpose of continuity, all of the metasearch platform providers that participated in this study will remain anonymous. The request came from the respondents themselves, as their industry is highly competitive. Thus, the companies will be referred to as Company's X, Y, and Z, and the respondents within the companies will be referred to as respondents according to the designated letter for their company.

4.2.1. Company X

Company X is a private company that operates a globally functioning metasearch engine that provides the possibility to compare prices of flights, hotels, and car rentals, as well as, providing a trip planning service. The metasearch engine is completely free for the end users. For the purpose of the study, only the flight search and price comparison application of the platform will be analysed. The service provides full price transparency across the market, providing completely unbiased flight prices for all users, regardless of their geographical location.

The respondent has been working at Company X for around 2 years and is currently in the position of Marketing Manager. The respondent's responsibilities within the company have included:

> *"…the designing, budgeting, implementation, and to some extent content creation, of marketing campaigns within the Nordic countries."* – (Respondent X, 2016)

Company X's platform functionality

The company's flight search product operates as a metasearch platform in which airlines and OTAs can sell their products to end consumers. The customer is able to make search queries based on their flight preferences:

> *"Once a customer enters the website, the flight search application allows the customer to enter various flight filtering data such as the origin and destination locations, the choice between one-way, return or multiple destination trip types, departure and return dates, ticket class, amount of passengers, the*

possibility to filter out only non-stop flights, and whether to include nearby airports or not." – (Respondent X, 2016)

The company does not sell any flight tickets themselves, but rather act as a pure facilitator between the different sides of the platform:

> *"Once the customer has entered all the necessary information, the platform searches for all currently available flights that match the desired flight details… The search results can be sorted based on one, or a combination of flight variables, such as ticket price, overall flight duration, time of departure and/or arrival, number of stopovers, location of stopover airport, a specific airline, or a specific alliance. The platform provides a completely unbiased selection of search results purely based on the variables chosen by the customer. Once the customer has chosen the desired flight, the platform will direct the customer straight to the airline's or OTA's own website, where the customer will make the actual purchase of the ticket"* - (Respondent X, 2016).

As to the ownership and creation of the metasearch platform, the respondent declared the following:

> *"The metasearch platform itself is fully owned and operated by [Company X], and so we have full control of the applications and functionalities available on the website... [However] we do cooperate with cloud services to facilitate the large amount of data transfers within the platform, and so, we need to buy server space from these companies. Also, [Company X] utilise analytical tools and services bought from other companies in order to successfully analyse user behaviour within the platform*." – (Respondent X, 2016)

The platform has developed in content and in functionality since its launch. The core service of the platform has stayed intact, with additional features having been added to it along the way:

> *"[Company X] was founded on the idea of providing a flight comparison platform for consumers, and thus, a simplified version of this flight search application was the first function of the platform. Later, [Company X] has added the other features associated with hotel and car rental, and the trip planning services."* – (Respondent X, 2016)

The major developments that have been made upon the platform have been due to two main goals:

> *"…to increase the metasearch efficiency through technological advancements, and to improve the overall user experience within the website."* – (Respondent X, 2016)

As to the reasons why the development projects to the platform have been possible, the respondent identified various trends within the entire industry:

> *"The metasearch capabilities have increased along with developments in server technology and the ability to transfer large amounts of data securely and with high speed… As the platform's success depends highly on the ability to show up to date flight information from their customers' own reservation engines, the speed and dependency of the search results on [Company X's] website correlate directly with their customers' level of technological capabilities… As airlines and OTAs continue to increase their own product inventory, the necessity for flawless communication between the different companies' databases increases… Technological developments has also allowed [Company X] to develop new search features and options that customers can utilise during their search process, for example, the option for filter out certain airlines or connection airports, or to filter out flights based on total duration of travel."* – (Respondent X, 2016)

In order to reach their development goals, Company X mainly utilise their own research and development teams:

> *"…we have a very large developer department. By head count, two largest departments within the company are the marketing and development departments."* – (Respondent X, 2016)

There are various types of research and development activities that Company X execute in order to retract the necessary information from their customers and the industry as a whole:

> *"On the one side, we use customer focus groups, where we place a group of users into a controlled environment and see how they use our platform and what kind of functions they like to use on the website… We can often get good constructive feedback and even functionality improvement suggestions, which we then take into consideration."* – (Respondent X, 2016)

"…we of course analyse how often and to what purpose our current functionalities on the website are being used, and try to make improvements based on this data." – (respondent X, 2016)

"…on the technological side, we have our own idea as to what we would like to for our technology to be able to do, and when this becomes technologically viable, we attempt to incorporate it to our own doing." – (Respondent X, 2016)

Company X's cooperation within the industry

Since the metasearch platform is fully subsidised on the end user, or buyer, side, Company X must generate their revenue from the seller side.

"As a metasearch company within the leisure air travel search industry, [Company X's] main source of revenue is from airlines and OTAs, who wish to display their products on the service that [Company X] provides." – (Respondent X, 2016)

In order to generate revenue from the airlines and OTAs, the respondent identified two main revenue models that they use on the platform:

"The two main revenue models for [Company X] are the commissions they receive from ticket purchases that have originated from searches made on their platform, and the advertisement space they sell on their website. For example, an airline can buy an advertisement space for a banner promoting a particular campaign that is available for a certain route with their airline". – (Respondent X, 2016)

In addition to airlines and OTAs, there may also be some other entities that wish to be visible throughout a customer's flight search process:

"There may be some other advertisers, such as credit card companies like MasterCard or Visa, who are closely affiliated with the process of purchasing flight tickets and want to promote their own services." – (Respondent X, 2016)

The exact type of pricing structure varies between countries and depending on what type of customers is in question, and it is the responsibility of Company X's sales team to identify and negotiate the appropriate contracts with the appropriate partners in order to further develop the attractiveness of their platform.

Like any industry, the leisure air travel search industry face numerous challenges that need to be resolved:

> *"[A challenge for the whole industry] has been the increased use of mobile devices by the global leisure air traveller… One challenge that has arisen is how to track and analyse the behaviour of a consumer that utilises both desktop and mobile technology in their search and purchasing of flight tickets. Also, there is the challenge of optimising marketing activities through the different marketing channels, as consumer habits and trends tend to shift quite often."* - (Respondent X, 2016).

In addition,

> *"…the gap that still exists between desktop and mobile technology doesn't allow for [Company X] to provide all of the same features and options for the mobile users as for the desktop users."* – (Respondent X, 2016)

It was made clear that Company X doesn't directly work in association with other metasearch companies, but rather are pure competitors.

> *"There isn't any data sharing or projects in conjunction with competitors that are aimed at the development of the entire industry."* - (Respondent X, 2016)
>
> *"[As such,] the metasearch companies don't have any so-called alliances, as do the airlines… the only large scale data sharing within the industry is the flight details information that metasearch companies get from airlines and OTAs so that their search results are up to date."* – (Respondent X, 2016)

Interviewee's perceptions on the leisure air travel search industry

When inquired about the development of the leisure air travel industry, the respondent expressed the following:

> *"Through the introduction of metasearch services into [the leisure air travel search] industry, the consumers have gained more bargaining power, as information, especially price information, transparency has increased… With the evolution of the Internet and social media, consumers have become more aware of the opportunities and possibilities that they have in association with air travel, and have become more particular in their preferences and demands."* – (Respondent X, 2016)

The increase in information availability and the changing competitive environment within the industry has created a new need for traditional airlines:

> *"The customer demand for personalised services, in conjunction with the increasing market share of LCCs, has led to airlines needing to profile themselves towards excellence in customer care."* – (Respondent X, 2016)

When comparing the different benefits that metasearch engines and OTAs provide the customer, the interviewee expressed the following:

> *"…[in comparison to OTAs], metasearch engines are a more convenient search channel for a well-informed consumer who wishes to plan and execute the travel planning themselves, as the ultimate prices received through metasearch engines tend to be slightly cheaper than through OTAs."* - (Respondent X, 2016)

However, there were clear benefits that were identified as to why customers may prefer OTAs over metasearch engines:

> *"OTAs have the ability to sell packaged deals, with the possibility of purchasing flights, hotels, and various activities as a single package, whereas this is legally nor technologically possible for metasearch engines. The option creates great value for travellers who wish to receive convenience and reliability during their holiday travels."* – (Respondent X, 2016).

A clear benefit that metasearch engines and OTAs have provided to the airlines was identified:

> *"Metasearch engines and OTAs function as effective marketing tools for airlines, and so, this has made the marketing planning efforts for airlines in some ways easier, as they know they will reach a certain audience through these channels."* – (Respondent X, 2016)

There are certain features that only airlines are currently able to provide their customers, which metasearch are unable to show:

> *"Airlines have the unique opportunity to provide their customer with more flexibility in the type of tickets their customer can buy. For example, they can provide their customers with tickets that don't necessarily have a specified return date, which is a feature that metasearch engines can't even display in their search results due to technical restrictions."* - (Respondent X, 2016)

Even though, airlines do not have much influence in what channel the customers use to search the flight tickets, they still have the opportunity to make the final impact on the entire flight experience:

> *"Even if a customer makes the flight search through a metasearch engine or OTA, they will eventually make the actual purchase through the airline, and so, this is when the airline can attempt to sell additional services or products to the customer, for example, lounge services, easier security checks, or some on-board entertainment."* – (Respondent X, 2016)

The respondent expressed that the provision of personalized travel experiences to customers has become an important factor for airlines in order to compete within the industry. In addition:

> "*The importance of brand strength and brand loyalty is also an important factor in airlines' attempt to remain competitive within the industry, because as airlines need to compete with other aspects of their service than purely price, it is important to retain loyal customers."* – (Respondent X, 2016)

The introduction of LCCs was a very large disrupter in the airline industry, and the respondent felt that:

> *"…one key reason that some traditional airlines lost business, and some even going bankrupt, was that once the LCCs entered into the industry, these airlines didn't recognize the size of the threat quick enough and didn't adopt a new way of providing customers with additional value."* – (Respondent X, 2016)

The relationship between airlines and their customers has also evolved through the digitalisation of the entire industry:

> *"…the biggest factor here is the customer service aspect of the business. Regardless of who directs the customer to the seller, or even who sells the ticket to the customers, it will be the airline who provide the customer with the actual travel experience. They use the airlines' airplane and communicate with the airlines' staff before, during and maybe after the flight."* – (Respondent X, 2016)

The force of social media has also had an effect on the relationship between airlines and their customers:

"…especially now, during the social media era, bad reviews and complaints spread very quickly, and so, I believe that the customer service aspect of the entire airline business has become increasingly important to airlines… In a sense, the increase in consumer bargaining power has also created the need for airline to be very flexible, because a simple mess-up on one customer may eventually have very large repercussions." – (Respondent X, 2016)

Digitalisation within the industry has also had an effect on the relationship dynamics between airlines and their customers:

"Well, the large increase in the amount of travellers these days has probably led the experience of average travellers to be more impersonal… [also] with the increase in online purchasing [of plane tickets], and no real need for human interaction in the search or purchasing processes, the entire travel experience can also feel slightly impersonal." – (Respondent X, 2016)

On the other hand, through digitalisation the airlines have access to more customer data, which creates possibilities in creating the entire process more personalised:

"…the use of targeted advertising or personalised communication, for example, using the customer's first name during customer contacts, can be viewed as creating a more personalised feel to the travel experience." – (Respondent X, 2016)

When looking at the large technological advancements in the industry that have played a key role in shaping what the industry looks like today, the respondent expressed the following:

"*Well, the GDS system was a huge development, because that key in making online purchasing of flight tickets possible… [which in turn] had a large impact on the rise of the OTAs."* – (Respondent X, 2016)

"The next large development in this front then was the entry of metasearch engines into the industry, which was a whole new element that wasn't there before. To some extent, [their entry into the market] can be compared to when Google entered the Internet, it changed completely the way that people can search for information... Overall, I think that metasearch engines have had a significant impact on the sharing of information, especially price information, and the transparency of available products and prices within the industry." – (Respondent X, 2016)

An important consumer trend that airlines need to take into consideration is the increasing desire for self-planned travel:

> *"As more and more information on possible travel destinations and overall travel possibilities come online, a large group of travellers have become more interested in planning their own travels, and so, don't necessarily need the traditional services of travel agencies, which can be seen in the down fall of many traditional travel agencies."* – (Respondent X, 2016)

As for the future of metasearch engines within the industry, and what their role will be within the industry, the respondent felt that:

> *"I don't think that metasearch engines will disappear at any point. Definitely there will be a larger gap between winners and losers, because the basic operation principle of the service is the same, and so, it will become essential for metasearch engines to be able to differentiate themselves from competitors also… whether it be through selling personalised expertise, an increase in user comfort, or just making it more convenient for the user to find certain options within the service."* – (Respondent X, 2016)

In contrast, the respondent had a possible view on the future of OTAs within the industry:

> *"… it depends on the moves of the airlines, because if the relationship between airlines and metasearch engines becomes more direct, the airlines might make drastic changes to the pricing of their products depending on if its bought directly from the airline or from a third party [ie. OTA]."* – (Respondent X, 2016)

When discussing the future of the industry, and what kind of opportunities the end customers may have within the industry, the respondent felt that:

> *"The most important factor for the customer is that the bargaining power and their right to decide will continue to increase when they use the metasearch engines."* – (Respondent X, 2016)

In contrast, the possible threats that can possibly be foreseen from the view point of the metasearch companies competing in the industry:

> *"As it is a very highly competitive industry, there will be winners and there will be losers. As the service is highly volume based, small players*

operating in small markets will not necessarily be able to expand and compete with bigger players, and thus, might not survive long." – (Respondent X, 2016)

"Of course, there is a lot of nervous thoughts about what kind of things Google are able to provide with their Google Flights service [which can be regarded as a metasearch engine], as they are an information and data powerhouse with huge resources, and already have a history in providing great user experience in online search." – (Respondent X, 2016)

4.2.2. Company Y

Company Y is a global technology company who operate a multi-sided platform that facilitates the interaction between end-users and various travel experience providers. The platform provides its end-users with a substantial selection of travel sites, ranging from airlines and online travel agencies to hotels and car rental websites. Company Y provides its end users with various tools to increase the entire travel search experience, with the most notable tool being their mobile application, which has been downloaded more than 40 million times. Company Y is available in over 30 countries and operates in around 20 languages.

Due to time and resource restrictions, Company Y preferred to provide insight about the topic in written form, and thus, they were provided the interview questions in written format. All of the answers came from one respondent, referred to from now on as Respondent Y, who is a PR Executive at Company Y. Even though Company Y also provides the possibility to search and compare hotel, car and packaged holidays, the analysis of these answers refer only to the flight price comparison application of the platform.

Company Y's platform functionality

For the actual functionality of the flight comparison platform, Respondent Y directed me towards their company website, where the basic philosophy of the company and the platform is explained, and also, encouraged me to test out the platform myself in order to see the various applications available to a normal traveller. However, the basic principle of the platform was made clear:

> *"The most important thing first: our services are free for travellers. They don't have to pay anything for the usage of the website or mobile application".* – (Respondent Y, 2016)

Essentially, the flight comparison service provided by Company Y is a metasearch engine in which airlines and OTAs are able to sell their products to end consumers. Company Y do not sell any of the travel products themselves, but rather act as a pure facilitator between the sellers and the buyers. The platform provides unbiased search results based on the selected preferences chosen and entered by the searcher into the search tool. Once a person enters the company website and wants to search for a flight,

they must first indicate in the search tool whether they wish to search for a round-trip, one-way, or a multi-city trip. Once the searcher has chosen the desired type of trip, they must enter the following information into the search tool: place of origin, destination, date of flight, number of passengers, type of passenger (Adult, Senior, Youth, Child, Seat Infant, or Lap Infant), Cabin Class (Economy, Premium Economy, Business, or First), and whether to include nearby airports into the search results or not. For the round-trip option, they must also enter the desired date for the return flight. There is also an option to further specify the date options: one can enter specific dates for the flight, they can ask for search results with +/- 3 days from the desired dates, and can also search for flights that are only during weekends.

Once the searcher has entered the information for their desired flight, they must initiate the metasearch by clicking the "Search" button in the search tool. The metasearch engine will show all of the possible results based on the selected preferences. Once the metasearch is finished, the searcher may sort the search results based on the following criteria: Price, Duration, Airlines (A to Z), Airlines (Z to A), Departure take-off (early to late), Departure take-off (late to early), Departure landing (early to late), Departure landing (late to early), Return take-off (early to late), Return take-off (late to early), Return landing (early to late), Return landing (late to early), and an option for the Recommended flight, which accumulates a result that is overall most convenient. The searcher also has the possibility to filter out search results based on the following preferences: the number of stops (non-stop, 1 stop, 2+ stops), the time of take-off or landing for the outward or return flight, the durations of the entire flight or the duration of the possible layover, selection of airports (departure and arrival), selection of airlines, the type of Cabin Class (Economy, Premium Economy, Business, Mixed), Flight Quality, selection of layover airports, type of aircraft (wide-body jet, narrow-body jet, regional jet, turbo-prop plane), and the price range. The results page also provides a possibility to compare the prices that Company Y provide in their search results with the prices provided by competing companies for their results with the same search preferences. Once the searcher selects and clicks on the desired flight product, the searcher is directed to the website of the travel provider, essentially, an airline or an OTA.

The metasearch platform is fully owned and controlled by Company Y, and they are fully responsible for the development projects revolving around the platform:

> *"Nothing is outsourced, everything [development of technological capabilities] happens internal based on our own capacities / team"* – (Respondent Y, 2016)

The initial launch of the platform was in the mid-2000's, with the first major milestone being an integrated multi-city flight search application. Some other important milestones included: the launch of the first mobile application (early-2009), an Explore feature that shows where you can go for how much (mid-2010), a Hacker Fares feature that saves money for the search by offering two one-way flights instead of one round trip (mid-2011), Price Trend feature that shows the right time book a specific flight (early-2013), a Payment Fee Calculator that reveals extra credit card charges (late-2013), and a Baggage Fee Calculator that reveals extra credit card charges (mid-2014). These innovations reflect well upon the ideology of Company Y:

> *"As a global tech company, innovation is a priority… More than 65% of the [Company Y] team focuses on site technology and innovation. We are focused on delivering new products that will raise the bar for online travel and make travel planning and management more seamless with our technology team…"* – (Respondent Y, 2016)

Company Y's cooperation within the industry

Since Company Y operate a metasearch platform that is fully subsidized from the end user (traveller) side, they must generate revenue from the other side of the platform. The two main sources of revenue for the flight comparison application of the Company Y platform are from airlines and OTAs. The aim for these companies is to have their products as visible as possible on the Company Y platform, and so, they create different kinds of partnership contracts:

> *"The OTA's are our partners and results from them are displayed in our search results at [Company Y]"* – (Respondent Y, 2016)

Essentially, there are two types of revenue models that Company Y can utilise to get revenue from their partners:

> *"1. Ad revenues from advertising placements on the website and mobile application.*

2. Referrals to travel suppliers and OTAs… [Company Y] earns its money through distribution revenues to travel suppliers and OTAs" – (Respondent Y, 2016)

Company Y perform as an individual competitor within the flight comparison metasearch industry, and so, do not have any real cooperation with other metasearch companies within the industry.

Respondent's views on the leisure air travel search industry

The entry of metasearch engines into the leisure air travel search industry has had a profound impact on the way that airlines aim to get customers to buy their products. They need to adapt the way they can receive additional value from their customers as the airlines cannot survive by simply selling the flight ticket, but rather need to invest on other aspects. The search and comparison phase of the customers' entire flight experience has been made much easier:

> *"We'll continue to see airlines trying different methods to get people to book through their sites directly but that's one of the advantages to using [Company Y's platform]. We show travelers fare information direct from airline's own sites as well as fare information being carried by third parties so users can easily compare and find the fare that's best for them."* – (Respondent Y, 2016)

As consumers have become accustomed to receiving instantaneous and comprehensive information in their daily lives, the metasearch companies need to develop and utilise their technological capabilities at the highest level, in order to get customers to use their platform as opposed to their competition:

> *"…what sets [Company Y] apart from other travel search engines and the online travel agencies is the comprehensiveness of our search results. We prioritize in relevancy, accuracy and speed."* – (Respondent Y, 2016)

When inquiring which consumer trends have had the largest impact on the way the flight search processes are today, the response was concise:

> *"The Internet and Mobile"* – (Respondent Y, 2016*)*

As for which business model, metasearch or OTAs, will be more important for the future development of the leisure air travel search industry, there was no definite distinction. However, the respondent felt that:

> *"Consolidation in the travel industry will likely continue [between metasearch engines and OTAs] but there will also be new companies that spring up in this space."* – (Respondent Y, 2016)

As for the threat of competition between the metasearch platforms within the leisure air travel industry, the respondent stated:

> *"[Company Y's] business model blends the best of technology and travel, and we are confident in the long-term health and competitiveness of our brand"* - *(*Respondent Y, 2016)

A big opportunity that was identified by respondent Y, was the possibility to provide the end user with a fulfilled experience through the entire travel experience, from the initial thought of a trip to the execution and management of the desired trip:

> *"We see an opportunity to guide our users through every step of the travel process – from planning to assisting them throughout the trip; mobile will continue to be a key focus for us – not just for flights but all aspects related to travel."* – *(*Respondent Y, 2016)

4.2.3. Company Z

Company Z a private company that operates a globally functioning metasearch engine that operates on the Internet and it provides the possibility to compare prices of flights, hotels, and car rentals. The metasearch engine has roughly 50 million monthly users and is completely free for the end users. The company was founded in the early 2000's, and it currently employs around 800 staff. Company Z also operate a free mobile application of the platform that has been downloaded over 40 million times, as of 2016, and their products are available in over 30 languages and 70 currencies. The service provides full price transparency across the market, providing completely unbiased flight prices for all users, regardless of their geographical location.

Even though Company Z provide the possibility to search and compare also hotel and car rentals, for the purpose of the study, the analysis of these answers refer only to the flight price comparison application of the platform

The participants in this study both work related to the marketing function of the platform, and so, are ideal candidates to provide insight on the topic at hand. The first representative to respond in behalf of Company Z, whom will be referred to as Respondent Z1 from here on, works as a Junior Marketing Executive, whose work revolves around the Nordics. As to the respondent's responsibilities within the firm:

> *"My main responsibilities include campaign planning and execution; search engine optimisation (SEO); app store optimisation (ASO); content briefing, writing, reviewing and editing; affiliate marketing; search engine marketing (SEM); influencer marketing and social media. In addition, there is a lot of admin responsibilities, such as managing freelancers and agencies, reviewing translations, and budget planning and reporting."* – (Respondent Z1, 2016)

The second representative, whom will be referred to as Respondent Z2 from here on, works as a B2B Marketing Executive. As to the respondent's responsibilities within the firm:

> *"My current job involves automating our marketing channels, reporting and analysis."* – (Respondent Z2, 2016)

Each candidate preferred to provide their answers in written format due to difficult scheduling and time restraints. The written questionnaires were identical to one another in order to get responses to the same questions and they were sent to each respondent via e-mail.

Company Z's platform functionality

In order to fully understand the reasons and decisions behind their platform functionality, the philosophy of Company Z was made apparent:

> *"[Company Z] aims to be at the heart of the traveller's mind at every stage of the booking journey. The first step is therefore to inspire travellers, as a large majority of travellers (at least leisure travellers) will be inspired by, for example, social media and content when choosing a destination for their holiday."* – (Respondent Z1, 2016)

The importance of customer engagement towards the success of the platform was made clear:

> *"During the research stage, some users will need more time to research and might browse our website and compare flights without actually making a booking. In some instances, we will retarget those users through, for example, Facebook retargeting or push notifications."* – (Respondent Z1, 2016)

As to the functionality of the company's leisure air travel search platform and the user experience from initial contact to ticket purchase, the respondents expressed the following:

> *"A user would arrive on [Company Z's website] from various sources such as paid advertising, social ads, referral links, search results or simply directly onto the site..."* – (Respondent Z2, 2016)
>
> "*Some users will be inspired by our news content or social channels and then go to the site, whereas others might just visit the site directly*." – (Respondent Z1, 2016)
>
> *"...[Once they arrive on the website,] they are generally encouraged to find travel through various calls to action. Once they have found the hotel, car hire or flight deal they want, they are then redirected to a partner's website to*

make the booking. This last part isn't owned by [Company Z]." – (Respondent Z2, 2016)

"…when a user searches for and finds their flights and clicks to book, we link them through directly to the airline or travel agent and the users completes the booking with our partner." – (Respondent Z1, 2016)

As for the revenue model's used by Company Y with their airline partners:

"Most of [Company Z's] revenue comes from commission – from people finding a deal, booking it and then our provider pays us commission. Our two main business models are:

1. *CPA = Cost per acquisition, either a flat rate per booking or percentage of basket value*
2. *CPS = Cost per click, every click from our website to the partner is monetised"* – (Respondent Z1, 2016)

"This is entirely dependent on the type of deal we have with an airline. It can be based on a click, booking or a combination of both." – (Respondent Z2, 2016)

It was also noted, that for advertisers:

"This again varies from one advertiser to another. We generally do deals on a CPM basis." – (Respondent Z2, 2016)

CPM referring to the marketing term of "Cost per thousand", which is a predetermined fee for each thousand advertisement impressions on a particular website (http://www.marketingterms.com/dictionary/cpm/).

Naturally, the metasearch engine has evolved since its introduction:

"[Company Z] started out as an Excel sheet! The initial functions once the website was up and running were mainly European flight search. We now have hotel and car hire verticals and added many functionalities such as our Everywhere function." – (Respondent Z2, 2016)

"When [Company Z] launched in 2004, it was with the goal of delivering a website that could collect, collate and compare prices for every commercial flight in the world. Since then there have been some major developments, with the biggest being the following:

- *[Company Z] becomes available in several languages*
- *[Company Z] opens international offices around the world*
- *[Company Z] launches its first version of the app*
- *[Company Z] launches its hotel and car hire product with the aim of moving from "flights to travel""* – (Respondent Z1, 2016)

As for the reasoning behind the platform development projects:

> *"We always aim to provide new developments that fit the user base in the various markets we work in."* – (Respondent Z2, 2016)
>
> *"[Company Z's] development projects have mainly been driven by a mixture of customer and market needs. For instance, the decision to operate in several languages is driven by the fact that in order for a company to properly exceed the needs of its consumers, it needs to ensure product-market fit, where of course language plays a big role." – (Respondent Z1, 2016)*
>
> *"…In the spirit of lean and agile principles, [Company Z] will always test ideas and experiment before rolling out a product feature to 100% of its users. Hence, always putting travellers at the heart of everything we do, while still making data-driven decisions."* – (Respondent Z2, 2016)
>
> *"…Moreover, the decision to become mobile-first, was driven by the fact that a large majority of consumers nowadays rely heavily on mobile devices for all online activity and [Company Z] therefore needs to ensure that the customer experience is seamless not only on desktop, but also on tablet and smartphones. In order to enable this, [Company Z] acquired mobile app development and design specialists [Company Zx] in 2014. While a lot of start-ups try to outsource the coding, [Company Z] believes in having the expertise in-house."* – (Respondent Z2, 2016)

Company Z's cooperation within the industry

Company Z has various relationships within the leisure air travel industry, and even though their main partners are airlines and OTA's, they also have some cooperation with other metasearch companies. In order to remain competitive within the industry, metasearch companies need to identify and utilise their strengths in order to gain competitive advantage:

"[Company Z] stands apart from most giant travel companies by providing access to its application programming interfaces (APIs) to developers for free. That being said, [Company Z] partners with and powers several meta searches worldwide. In this way, the metasearch industry can evolve and leaders can work together to provide comprehensive tools to travellers. Once the companies reach a certain threshold of usage, [Company Z] requires a revenue-share deal. The revenue share incentivizes start-ups and companies to reinvest the money in the product, such as in additional marketing to drive more usage." – (Respondent Z2, 2016)

In order to strengthen partnerships within the industry, Company Z also provide industry information and insight to their partners:

"We have a product called Travel Insights that we offer to various flight search companies, airlines, airports, etc." – (Respondent Z1, 2016)

The partnerships with OTAs is essential for Company Z, as they are the largest source of revenue for the company. As to the type of relationship that Company Z has with various OTAs, and whether they share data or information with each other:

"We are connected to OTAs via an API and can thereby access their data. [Company Z] gets its biggest share of income from OTAs so the relationship with them is of course extremely important and our commercial team works hard on maintaining those relationships. Overall, OTAs are very easy to work with since they are more tech savvy in comparison to airlines, usually have localised websites and will also give us coverage and revenue for non-monetised airlines (e.g. low-cost airlines such as Ryanair). Nevertheless, working with OTAs is not without its challenges; There are a lot of pricing issues, customer service issues and the user journey is therefore not always great." – (Respondent Z2, 2016)

"[Company Z] enjoys fruitful and productive relationships with 100s of OTAs around the world." – (Respondent Z1, 2016)

"…[Company Z] recently introduced something called PQS, which stands for partner quality score. Each partner receives a rating based on customer feedback, which takes into account at ease of booking, ease of website use, price accuracy and clarity of optional extras and costs. Some partners, including OTAs, received quite a low score and [Company Z] is working hard together with them to improve their ratings." *– (Respondent Z2, 2016)*

Respondents' views on the leisure air travel search industry

The introduction of metasearch companies into the leisure air travel search industry has created the necessity for airlines to change the way that they attract consumers into their own websites. The airlines need to recognize this change as both a threat and an opportunity:

> *"Airlines have been unable to ignore the rapid growth of metasearch companies and their increasing role in the online travel industry. Instead of finding new ways to attract customers to their own website, most airlines have embraced and adapted to the new reality, and have worked together with metasearch companies in order to get better results. After all, metasearch companies can help airlines to find new customers and drive new traffic to their websites."* – (Respondent Z1, 2016)

> *"I believe this has made it harder for airlines to attract users directly to their website. However, [Company Z] and other metasearch engines have brought millions of customers to airlines that would have otherwise not have had*." – (Respondent Z2, 2016)

> *"Increasingly more, airlines are realising the importance of investing the necessary resources to improve their websites – making them as attractive and easy-to-navigate as possible. The shift to mobile also requires serious attention and investment from airlines. A customer does not want to have a great mobile experience on a metasearch and then click through to an airline on their mobile device and then experience not being able to get any further."* – (Respondent Z1, 2016)

The consensus with the respondents was that airlines have been too slow in adapting new technologies into their business developments and in providing their customers with the sufficient level of digital and online means to operate:

> *"Airlines generally have quite old technology and not all have adapted well to this along with the various market pressures."* – (Respondent Z1, 2016)

> *"…In short, airline companies are way behind in technology in comparison to metasearch websites, making it difficult to adapt to various market pressures. Airlines have simply not invested in the engineering efforts to enable them to act fast enough."* – (Respondent Z2, 2016)

The exponential increase in available information for travellers has made it more difficult for airlines to get their customers to commit to their products:

> *"I believe that consumers have become less brand loyal to a specific airline due to the growth of metasearch companies. Metasearch has made it much easier for consumers to "shop around on numerous different websites", highlighting the amount of choice that exists and the possibility to get great travel deals. Hence, unless you are a business traveller, you are unlikely to select the flight that is the most expensive, despite it meaning that you have to travel with a low-cost airline, which does not give travellers any additional value."* – (Respondent Z1, 2016)

As traditional airline companies can't compete anymore solely on ticket pricing, it has created the need for airlines to provide their customers with additional products and services in order to increase the additional value provided by airline company to the traveller:

> *"I believe airlines do generally provide more and more value to their customers. Meals, entertainment, etc. are light-years ahead of what they were 10 years ago."* – (Respondent Z2, 2016)

> *"…Airlines always strive to make more revenue from their customers and are becoming more creative in doing so. For example, it is now possible to buy various economy class tickets."* – (Respondent Z2, 2016)

The provision of additional services is not only mandatory for airlines in order to compete, but is also apparent in metasearch companies themselves:

> *"When the user has bought a flight, hotel or hired a car through one of our partners, it should receive a confirmation from the partner and all further enquiries regarding their trip should be raised with the partner. However, there will still be some travellers who turn to [Company Z] and we have an in-house user satisfaction team that deal with and try to help those users."* – (Respondent Z1, 2016)

In addition to low-cost carriers providing customers with cheaper flight tickets, OTAs can provide their customers with similar benefits:

> *"Additionally, OTAs act as a major threat to airlines, often offering better deals, leading to price-sensitive customers booking through them instead of directly with the airline. It is therefore imperative for airlines to present*

themselves on metasearch sites in a way that encourages travellers to come directly to their own websites, rather than an OTA." – (Respondent Z1, 2016)

Technological advancements have played a vital role in the development of the leisure air travel search industry. When inquired about the key technological advancements that have had the largest impact on the way that the industry is today, the respondents expressed three major developments:

"The internet above all has drastically changed the travel landscape over the past few decades. It has allowed the emergence of OTAs, metasearch engines, social media, travel bloggers, etc. It has also allowed millions more people to travel." – (Respondent Z2, 2016)

"Metasearch has altered the way in which people search for and book flights. It has been gathering momentum considerably over the last few years, and its rapid growth shows no sign of slowing down. All in all, consumers want freedom of choice and transparency, in the simplest and most concise format possible as the information available continues to grow exponentially. Thanks to metasearch, the travel market has become much more accessible, which means that travellers no longer need to spend time looking through numerous of different websites when booking." – (Respondent Z1, 2016)

"Similarly, the proliferation of mobile devices has changed the way in which people research and book their travel and companies operating in the online travel industry have been forced to invest in mobile interfaces and apps." – (Respondent Z2, 2016)

The advancements in technology have also had an impact on how consumers behave and make decisions, creating new consumer trends, which have also had a very large impact on the way that the leisure air travel search industry is today. As the global population is constantly increasing, so is the amount of potential travellers also:

"I think the simple fact that more and more people travel has been the single largest consumer trend." – (Respondent Z2, 2016)

"Travellers have become more independent and now prefer to select individual elements from various operators and put together their own holiday, rather than booking a package holiday. Moreover, people are travelling more

frequently and want to be able to make flexible choices when planning for their travels.“ – (Respondent Z1, 2016)

When inquired about the key reasons for why metasearch companies, such as Company Z, have been so successful in entering and competing in the leisure air travel search industry, the respondents felt the following:

“[Company Z] is first and foremost a tech and data company (that happens to be operating in travel). This has enabled us to develop an advanced product, which provides the user with a seamless online experience. In comparison, a lot of airlines, for instance SAS, are way behind when it comes to technology and have not been able to change their product as quickly to meet the needs of consumers in a fast-paced marketplace. Hence, a large proportion of travellers are turning to metasearch engines and OTAs for their travel plans as the search experience is better. This is of course also linked to the fact that more and more people are travelling and people have become increasingly pickier in their searches. The ability to filter by, for instance, price, time and airline to get the best deal is more important than ever and this is something that companies such as [Company Z] offers.” – (Respondent Z1, 2016)

“The airlines themselves first and foremost, without airlines [Company Z] doesn’t exist. The Internet and technology being the second one.“ – (Respondent Z2, 2016)

In addition, the characteristics of the entire industry has been a large factor in why companies that have the capacity and expertise to analyse data have been so successful:

“It should also be noted that online travel is an industry which consists of a huge amount of data and therefore a lot of potential. This is due to the number of possible combinations given the numerous airports, airlines and passenger types that exist.” – (Respondent Z1, 2016)

The inquiries about the future of the leisure air travel search industry brought up some interesting points. Even though, business is generally about making revenue, it is vital for metasearch companies to recognize the larger picture:

“It should be noted that not all airlines are monetised, for instance, Ryanair and Easyjet. However, [Company Z] feels that they would lose out more

on not providing these airlines on their website, despite not getting commission for flights bought through these partners." – (Respondent Z1, 2016)

There are various opportunities that the respondents identified for the future of the leisure air travel search industry:

> *"I believe the biggest opportunity for the travel industry are emerging markets such as China. The potential is absolutely huge!"* – (Respondent Z2, 2016)

> *"In the next few years we will most likely see significant changes in the metasearch industry, as companies continue to improve their mobile offerings and examine new areas to branch into. A key focus for both established and start-up metasearch companies is to try and improve their offerings for people who are at the earliest stages of thinking about a journey. So far, metasearch has been strongest in providing data to travellers who have a single or handful of destinations in mind, but semantic search and smart options offer the chance of broadening the appeal of metasearch and increase companies' market share. Improving semantic search is attractive to both consumers and companies, as it will increase the usability of a site and therefore conversion rates. Companies will also try to leverage this information to build intelligent profiles that will further enhance suggestion capabilities."* – (Respondent Z1, 2016)

In contrast, the respondents did identify some potential threats that could disrupt the entire industry:

> *"It has been argued that Google Flights poses a huge threat to airlines, metasearch companies and OTAs. Nevertheless, at the moment Google Flights is only showing airline results and thereby not providing as extensive results as a metasearch."* – (Respondent Z1, 2016)

> *"Hard to pinpoint threats for all of them. For Airlines, safety, terrorism, oil prices are all big threats. For meta search and OTA, the continual collaboration with airlines is of huge importance!"* – (Respondent Z2, 2016)

4.2.4. Vertaa.fi

Vertaa.fi is the largest Finnish price comparison platform that operates through their website www.vertaa.fi. The company was established in Helsinki, Finland, in 2000 and is a privately owned company. Vertaa.fi is a part of Compare Group. The platform allows its end users to compare products, services, prices, delivery prices and delivery times (Vertaa.fi, 2016). Vertaa.fi does not sell any products themselves but rather act as purely a facilitator in the connection between companies selling products and services with the interested end users. The platform provides its end users with completely unbiased search results, based solely on the search criterion and phrases used.

During the research, Vertaa.fi was also contacted for their opinions the topic at hand. However, as the flight price comparison tool within the Vertaa.fi platform is a relatively marginal part of their entire business, and could not provide perspective from other than the Finnish markets, their answers were omitted completely from the study.

5. Discussion

Based on the information in the literature review and the qualitative data received through the data collection process, various themes and connections between these themes have emerged that can be used to formulate conclusions regarding the research question. These themes were identified through the analysis of the qualitative data and finding similarities between the answers of the respondents. All of the themes reflect aspects that have been essential in the development of the leisure air travel search industry and give a perspective on how these themes have had an impact on the way that the digitalization process of the industry has developed. These themes are divided into their own sections within this discussion, and they all provide general findings, as well as, concrete examples from the case company respondents. When analyzing the results from the interviews and the questionnaires, it is essential to link them to the theoretical lens (a combination of theories by Evans & Schmalensee (2006) and Hagiu (2006)) that was introduced in the Methodology section. The case companies are briefly introduced in the table below (Figure 3), with certain key facts presented for each.

	Finnair	**Lufthansa**	**Company X**	**Company Y**	**Company Z**
Function	International Airline	International Airline	Metasearch company	Metasearch company	Metasearch company
Founded	1923	1926	2006	2004	2003
Size (employees)	4800	40000	200+	-	770
Search Platform Functionality	Ability to search for all flights owned by company	Ability to search for all flights owned by company	Pure facilitator between end customer and ticket seller	Pure facilitator between end customer and ticket seller	Pure facilitator between end customer and ticket seller
Ownership of technological developments	IT Infrastructure owned by Amadeus, inhouse development projects	IT Infrastructure and all development fully owned	Partnerships with cloud server companies; large portion of employees involved with R&D; Utilize analytical toolsa dn services from other companies	All development is done internally; 65% of employees are focused on platform technology and innovation	Company Z is first and foremost a tech and data company whom happen to be in online travel. Everything is owned and developed by themselves.
Objectives from development projects	Utilize location of Helsinki-Vantaa airport as connection hub from Europe to Asia; Increase in mobile capabilities; Better customer experience	eViation in strategy since 2000; reach highest level of customer loyalty in industry; Connectivity between customers and company	Enhance metasearch efficiency; Improve overall user experience; Seamless connectivity between partering companies and customers	Raise the bar for online travel search	To be in the mind of the traveller at every stage of the booking journey; better customer engagement; Collect, collate and compare prices of every commercial airline in the world.

Figure 3 – Brief Introduction to Case Companies

While analysing the different themes that have emerged from the qualitative data, it is important for the reader to remember the research questions of the study: *Has the digitalisation of the leisure air travel search industry been enabled by the characteristics of MSPs? If yes, how? If no, why not?* Within the analysis of each individual theme, there will be reference to the research question and at the end of this section, there will be a collected answer to the research questions at hand.

Technological milestones

Firstly, it is important to identify what the respondents felt have been the key technological milestones that have shaped the entire leisure air travel industry as it is today. Few respondents identified that the development of the CRS and GDS networks was the key enabler for airlines tickets to be distributed electronically worldwide, as they enabled the efficient transfer of information between booking agents and airlines. This made the reservation process of leisure flights much less time-consuming and decreased the amount of inaccurate information between the users involved. These developments were at the very peak of technological proficiency, as the CRS Sabre project introduced in 1962 by American Airlines was described as: "*a technical marvel representing a programming task that surpassed the coding effort required by NASA's Project Mercury"* (Feldman, 1987). As a few respondents identified that once the Internet became available to consumer use, the possibilities for leisure air travel search became much more varied and comprehensive, as it eliminated the factors of location and time for the consumer in the entire search process. The search could be done anywhere with Internet access and at any time, reducing the costs related to the previous process of physically having to go to booking agencies. The more recent development of mobile technology was accredited to creating the possibility for airlines and metasearch engines to be able to communicate with their customers seamlessly and being able to provide them with sufficient and up-to-date information. It was identified that this, along with improvements in mobile device processing power and user interface creation, has improved the overall user experience for consumers in their leisure air travel search. The aforementioned developments were partly a result of improvements in server and information sharing technology, which were identified by some respondents as the key enabler for the development of the metasearch engines.

As the capacity to store, process, and share information has increased, so has the ability to provide consumers with better metasearch abilities. Lastly, a few respondents identified that the rise of social media has greatly empowered the end consumers in the entire industry, as it is a platform where consumers can get large amounts of information on desired travel locations, airline companies, as well as, metasearch engines. In addition, social media platforms allow end users to share their own experiences and reviews on these topics, providing a free service to consumers searching for a particular aspect of leisure air travel. It was identified that even though these platforms are good marketing and communication tools from companies to customers, it is important to recognize the fact that bad news and reviews spread extremely fast in social media, making it ever so important to create satisfactory user experiences for all consumers.

In essence, all of these developments have improved the entire user experience of the consumers, mainly focusing on the time and convenience factors of the search process. By reducing the time factor and increasing the convenience factor through better facilitation of information, these developments have simultaneously decreased the search and shared costs for the end consumers.

Seamless communication

One of the most important factors that all of the respondents identified as key to success in this industry was the seamless communication between the companies and their end customers. As was already suggested in the literature review (Manhas & Tukamushaba, 2015), contemporary consumers have become accustomed to receiving information instantaneously and of high quality, and this has led to airline companies, as well as, metasearch companies needing to invest heavily in their ability to process and transfer data. For example, for the airline companies, this meant investing in their mobile capabilities in order to be able to communicate all of the necessary flight information to their loyalty customers via their mobile application. Another example was that both airlines had developed new services, such as online check-in or the ability to upgrade the on-board refreshments and other services, in this mobile application in order to make the entire user experience better.

More importantly, the core competence for all metasearch companies, i.e. the efficiency of the actual metasearch, is highly dependent on the ability to transfer large

amounts of data securely and with high speed. Developments in server technology have allowed these metasearch companies to make their metasearch more efficient, and thus, be able to provide their users with more accurate results at a faster rate. All of the representatives from the metasearch companies identified that a difficulty that is present in their partnerships with the airline companies is the lack of compatibility between their respective information systems. This is due to the airline companies having older information and data infrastructures that are not easily adaptable to new demands by their partners and customers. It was made clear that the metasearch companies recognize the need to be able to send and receive flight information to and from their partners, and so, have made investments in how to be able to assist the airlines in their development projects.

In essence, by making the search query efficiency better, the customers will receive better and more accurate results quicker. This, along with the fact that all metasearch platforms are subsidized from the end used side, can be seen as a reduction in search costs for the end consumers. In addition, as the airline companies are able to provide their end users with higher level of service through digital means, it will decrease the shared costs for each side as the personal interactions between the end users and the airline personnel will decrease.

Customer Loyalty programs

For traditional airlines, the importance of customer loyalty and the provision of an excellent user experience has become an integral part of their survival tactics in the competitive leisure air travel market. This has been partly due to the introduction of LCCs, whom have made it impossible for traditional airlines to compete for customers through pricing, but rather have created the necessity for them to differentiate themselves through other aspects of their business. In addition, the introduction of the metasearch engines has created a marketplace with complete transparency in ticket pricing information, making it vital for airlines to be able to provide their customers with additional value through their services and ancillary products. The advancements in mobile and communication technologies has allowed for airlines to develop new communication channels with their loyalty customers in order to provide them with the best overall user experience possible. For example, the mobile applications created for Finnair and Lufthansa allow them to provide their users with up-to-date information on their flights, and provides them the possibility to make various changes or upgrades to

their flights. They are also provided with airport information and a list of all the possible additional services available to them throughout the entire flight experience.

In the authors personal opinion, and as was suggested by many of the respondents, a critical characteristic that all players in the leisure air travel search industry should possess is flexibility. As the number of travellers worldwide keeps on increasing, it creates the necessity for airlines to be able to adapt to new situations and varied customer needs. With the developments in the metasearch engines, it has created an increasing consumer trend of self-planned travelling. Airlines have had to respond to this trend by providing their customers with a larger variety of flexible tickets, allowing their customers to be able to make certain changes to their flights with a reasonable price. The representatives from the airlines companies identified that in order to keep their loyalty customers satisfied, they need to be able to provide them with a flight experience with minimal inconveniences. For the metasearch companies, this trend has created the need for more search query options and the possibility to analyse and compare the search results based a variety of criteria.

As identified by most of the respondents, the way that contemporary travellers make search queries is based more on the desired flight route itself, rather than on the airline operating the route. This switch in consumer behaviour has created the necessity for airlines to be able to provide their customers with additional value in order to keep their loyalty customers satisfied, as well as, gaining new customers. For example, the representatives from Finnair identified that the company needs to utilise the geographical location and excellent efficiency of the Helsinki-Vantaa airport in order to attract foreign customers. The fact that the airport has excellent services and acts as a very high quality facilitator of transfer for European travellers flying to Asia has allowed Finnair to use this in their marketing activities. The most attractive characteristic that Finnair aim to utilise here is the reduction in unnecessary time delays, which reflects to idea of decreasing the shared costs throughout the flight transfer process. As the customers have to spend less time standing in line or waiting for airport personnel, they have more time to utilise the services available to them in attempt to make the entire user experience more enjoyable.

In essence, the improvements in customer loyalty programs and the developments in mobile and information technologies has allowed for airlines to be able to make their customers' user experience more personalised. The customer loyalty programs provide

the airlines with a vital platform for them to get to know their customers better in order to provide them with better future services and experiences. In order for customers to commit to the customer loyalty programs provided by the airline companies, it is important for them to be able communicate the benefits and the additional value provided by the loyalty program to the end consumer. This corresponds to the findings made by Kang, Brashear-Alejando, and Groza (2015) on the topic, that in order for customers to truly identify himself or herself with a particular company or brand through their loyalty program, they need to fully internalize the potential value that the program may bring to themselves.

Knowing your customers

As contemporary consumers continue to increase their usage of online and mobile applications to search and purchase their leisure flight tickets, it is becoming essential for the airlines to know their customer. Many of the respondents identified that the with the emergence of the metasearch engines, the end customers have gained a lot of bargaining power, as the amount of information and possibilities available to them has become increasingly large. In order for an airline to be able to provide their customer with the best user experience possible, they need to be able provide them with a service customized directly to the customer's own preferences and needs. This has led to airline companies, as well as, metasearch companies needing to invest heavily on data analysis. Through data analysis, the companies are able to recognize larger scale phenomena, such as changes in market demands and consumer behaviour, and make changes to their products and services accordingly. In addition, they can analyse the purchasing and user behaviour of individual customers in order to create more personalized services to them in the future.

Essentially, it has become vital for airlines to be able to minimize all of the possible inconveniences that may arise in a customer's entire search process. An example of this came from Finnair, whose largest customer base are from Finland. The representatives from Finnair identified that to a Finnish traveller, a good customer service experience is one that does not involve a lot of personal interaction, but rather an experience where the traveller is able to do everything by himself or herself online. By identifying this general characteristic of the Finnish consumer, Finnair are able to focus their abilities to their online and mobile application development projects. In contrast, the metasearch companies focus more on the user behaviour on their website, trying to make the

process of browsing, searching and navigating through their website most pleasing to the users. This is based more on the physical activities that are done on the website, i.e. which area of the screen the user's cursor most frequently hovers over; which search results or links are most often clicked on the website; what features are most often used on the website, etc. As the cost for the end user of switching from one metasearch platform to another is almost non-existent, it is essential for these companies to provide their users with a superior user experience to their competitors.

By knowing the desires and needs of the end customers, airline and metasearch companies are able to provide services that are more efficient and tailored to the particular needs to the customers, leading to a significant improvement in the overall user experience. These improvements have a direct correlation to the decrease in search costs for the end user as they get to utilise more efficient and effective search tools, as well as, the entire process being subsidized from the user side. In addition, there is a decrease in shared costs for both the airline companies and the end users during the search process, as it is fully facilitated in the metasearch platform.

Ownership of data

Lastly, it was made apparent that as all of the respondents expressed the importance of data analysis in order to better understand ones customers, as well as, the markets. It was also made clear that owning all of the information received through their data collection was essential. By having ownership of the data, there would be no conflict about the ability to analyse this data, and companies would have more agility in the entire data analysis process. As the efficiency of customer data analysis increases, so does the possibility for companies to utilise this data in order to increase the customers' whole user experience. An example of this came from Company Z, who made the decision to acquire a mobile application development company in order to have all of the expertise for their mobile application development project within their own organisation. This creates a competitive advantage for them, as they become more agile and adaptable to change, and are able to respond to changes in their customers' consuming behaviours. These findings correspond to the analysis on the topic by Al-Khouri (2012), who suggested that companies in the private sector will continue to use customer data as a source of competitive advantage, and will be able to use this data to drive their innovation and productivity further.

5.1. Responding to the Research Question

The themes provided in the previous section form the basis for responding to the research question of this thesis.

Has the digitalisation of the leisure air travel search industry been enabled by the characteristics of MSPs? If yes, how? If no, why not?

In responding to the research question, it is important to factor in the specified characteristics of the MSPs introduced in the theoretical lens section of the study. The idea of the MSPs is that there are companies connected to it who *need each other in some way; but who cannot capture the value from their mutual attraction on their own; and must rely on the catalyst to facilitate value-creating interactions between them* (Evans & Schmalensee, 2008). In addition, based on these assumptions, there are two basic functions that these MSPs can perform; they can reduce *search costs* for the different parties involved before the transactions and they can reduce *shared costs* that are incurred during the transactions themselves (Hagiu, 2006).

Keeping in mind the aforementioned characteristics, there are several key drivers that can be identified from the research, which have had a profound impact on the way that the industry has gone through its digitalisation. In order to answer the research question, these key drivers need to be analysed.

First, all of the companies that are represented in the study have realised that in order to compete within the industry they need to be able to respond to the customer expectation of receiving instantaneous and high quality service. This change in customer expectations has been in part the result of developments in ICT, and especially, mobile technology, which have allowed users to access all of their necessary data without location or time restrictions. Essentially, this demand corresponds to the necessity for companies to be able to transfer and communicate information extremely efficiently and reliably to the end consumers. By answering this demand, both the search costs and shared costs are substantially decreased for the end consumer, as they require less time and effort to fulfil their needs. As the industry is mainly subsidized on the consumer-side, this does require some increases in costs for the companies involved. However, on the long run it will be beneficial for them, as the companies need to be able to provide these services in order to retain old customers and attract new ones.

Second, it seems that the most important driver for development projects in all of the representative companies is to increase the overall user experience for the end customer. This is extremely important, as the actual search function within the entire search experience is quite similar for all companies; they need to be able to differentiate themselves from others through other means. These development projects have evolved from purely having the server capacity to store and transfer the necessary data to the customers, into creating more convenient and user-friendly interfaces for their online services. In order to create a good customer experience, these companies need to know their customers extremely well, which in turn, requires a high level of data analysis. For the metasearch companies, they base their analyses more on the way that consumer acts on their websites, and where to place certain search results in order to make the entire process more convenient for the customer. For airlines, however, they can use their loyalty programs to make their customer commit, by showing their profound knowledge of the preferences of the customer. By providing a good search experience, these companies can make the future search processes more predictable for the consumers and develop their own services to make these particular searches more personalised.

Third, the amount of data and information that needs to be available to the companies and customers within the leisure air travel search industry require third party facilitators so that the transfer of this information from one party to another is as seamless and convenient as possible. The industry has evolved to the point where all companies need to collaborate with experts in data storage, data analysis and information sharing, in order to be able to cater to the customers' needs. This reflects to the idea that companies need other companies in order to capture value from their mutual interest, and provides an opportunity for companies to cut costs through more efficient processes and services. Through these collaborations, the companies involved in the industry provide their customers with the most efficient services, which corresponds to decreases in their search and shared costs.

Lastly, as the entire industry is mainly subsidized from end user side, a priority for the companies competing in the industry is to gain repeat customers. From the responses provided by the company representatives, the biggest focus in the development of their services is the elimination of inconveniences, as there are numerous substitute services available to consumers searching for leisure flights online. From the metasearch side, the companies need to create an experience where the user

does not face any tedious moments or complicated options, so that the user does not feel the need to switch to another service. From the airline company side, they need to make the flight information and the availability of the products as visible and simple as possible, so that the customer can be engaged to the product easier. The entire industry has seemed to make a shift towards a model where the search costs for the consumers are minimized, and so, the companies involved have created new ways to engage their customers to their products and services.

In essence, it can be concluded that the characteristics of the MSPs have played a very large role in the digitalisation of the leisure air travel search industry. All of the companies involved in the industry have become more dependent on other companies that can provide some additional benefit to the entire search process for the end consumers. All of the major technological developments within the industry have enhanced the flow of information between companies and their customers, which in turn has increased the bargaining power for the consumers, as they are more product and price conscious. The developments made by the companies towards their service quality have significantly decreased the search and shared costs for the consumers throughout the entire search process. The elimination of any inconveniences in the users' search experience, and thus, the elimination of additional search costs, has become a priority for airlines and metasearch providers alike. As the search and purchasing behaviour of the consumers in the leisure air travel search industry has developed, so has their expectations for instantaneous information and high levels of service quality.

6. Conclusion

The research problem for this thesis identified the fact that through developments in ICT, and consequently the increased availability of instantaneous and accurate information, consumers have become more demanding in regards to the level of service they receive. This has created a necessity for companies to be able to provide their customers with high quality information about their products and services instantaneously, and be able to communicate this information to their customers without barriers. This is especially true in the leisure air travel search industry, as the entrance of metasearch engines has made the entire industry more transparent in regards to pricing and flight information. These metasearch engines act as pure facilitators of information between the airlines and their customers, and so, the airlines have had to adapt their services in order to attract customers. As the introduction of the metasearch engines, whom operate a multi-sided platform, into the industry had such a profound impact on the way that consumers can search for flights, it led to the research question – whether the defining characteristics of these MSPs have been the key enabler for the whole industry to go through their digitalisation process.

As it would be difficult to obtain quantitative data on this type of phenomenon, it was more viable to make the study using qualitative research methods. In order to get various different views on the subject, a number of different companies were contacted to partake in the study, with representatives from both the airline companies and the metasearch companies. To represent the traditional airlines within the leisure air travel search industry, respondents from Finnair and Lufthansa provided their views on the subject. From the metasearch side, three (3) companies were willing to partake in the study, but due to the highly competitive nature of their market, they all wished to remain anonymous. In an ideal situation, all of the qualitative data would have been collected through interviews, but due to scheduling and time restraints, some of the respondents wished to provide their answers in written format.

From the qualitative research, various themes were formed using the similarities between the answers provided by the company representatives and the previous literature on the subjects. These themes were identified as Technological milestones, Seamless communication, Customer Loyalty programs, Knowing your customer, and

Ownership of data. Firstly, it was important to note that all of the technological milestones that had been mentioned were connected to the need to be able to improve the provision of high quality information at high speeds to the customers. Second, it was essential for all respondents that the communication between their companies and their customers was seamless, in order to be able to provide them with the best quality of service possible. Third, it was made apparent that knowing ones customer well is key to being able to provide them with a premium user experience. This was largely linked to the ability of good data analysis and the utilization of customer loyalty programmes.

The conclusions made regarding the research question were confirming. The characteristics that are specific to MSPs have had a profound impact on the way that the leisure air travel search industry has gone through digitalisation so far. The major technological developments within the industry have been made in order to increase data transfer between entities, and in essence, to make the entire search process more convenient for the end consumer. Similarly, the improvements in service quality by the players within the industry have been made in order to satisfy the expectations of the more demanding customers, who have become more powerful in regards to bargaining power due to the increased availability of flight information on the Internet.

The results from the study largely reflect the theory applied. All of the respondents identified that the introduction of MSPs into the leisure air travel search industry have decreased the time and cost factors for the end consumers. This corresponds to the theory introduced in the theoretical lens (Evans & Schmalensee, 2008; Hagiu, 2006) that the basic functions of an MSP is to decrease either the search costs or the shared costs of the platform users. All of the major technological development, and the applications associated with them, which were identified by the respondents, such as the CRS and GDS networks, and the utilization of the Internet and mobile technology within consumer markets, have been applied early and very effectively within the leisure air travel search industry. As suggested by Feldman (1987), the programming tasks undertaken during the CRS Sabre project that was introduced in 1962 were parallel to those of NASA in their space exploration projects, signifying the magnitude of these technological developments. Many respondents identified that in order to remain competitive in a market that is largely customer data driven, it is important to

have ownership of your collected customer data, so that further data analysis can be done more comprehensively and without the difficulties that may arise while using third party data analytics providers. This corresponds to findings by Al-Khouri (2012) who suggested that companies in the private sector will continue to use the ownership of customer data as a source of competitive advantage, and will be able to use this data to drive their innovation and productivity further. The ownership of customer data also leads to better possibilities regarding a company's customer loyalty program. As identified in the study, companies in the industry use these loyalty programs in order to provide their customers with various additional services in order for them to commit to their brand. The findings made in the study regarding the importance of customer retention and customer loyalty towards the company correspond to research made by Kang, Alejandro, and Groza (2015), who suggest that it is essential for customers to fully internalize the potential benefits and value that committing to a particular loyalty program will give them.

This study provides some insight on what competitors in the leisure air travel search industry regard as competitively important and what some of the key factors are in order for companies to satisfy the needs of the end customers. These findings contribute to the theories evolved around customer loyalty programs, specifically in the leisure air travel industry, and the importance of customer data ownership and its analysis. In addition, the results provide insight on the importance of MSP characteristics in the development of consumer markets, providing a specific angle from the leisure air travel search industry side. Most importantly, the study provides excellent data on the importance for a company to know their customers thoroughly and having the ability to utilise vast customer data in order to recognize and adapt to changing consumer demands.

The results from this study may be interesting to both academic researchers and business persons alike. On the academic research side, this study provides real-life examples from the leisure air travel search industry perspective on the way that the introduction of MSPs into the industry have had an impact on the way that consumer behaviour within the industry has changed. Consequently, the study provides examples of how the specific characteristics of MSPs have had an impact on how the competitors within the market need to alter their business approaches in order to meet these consumer demands. Similarly, the study provides an interesting perspective for

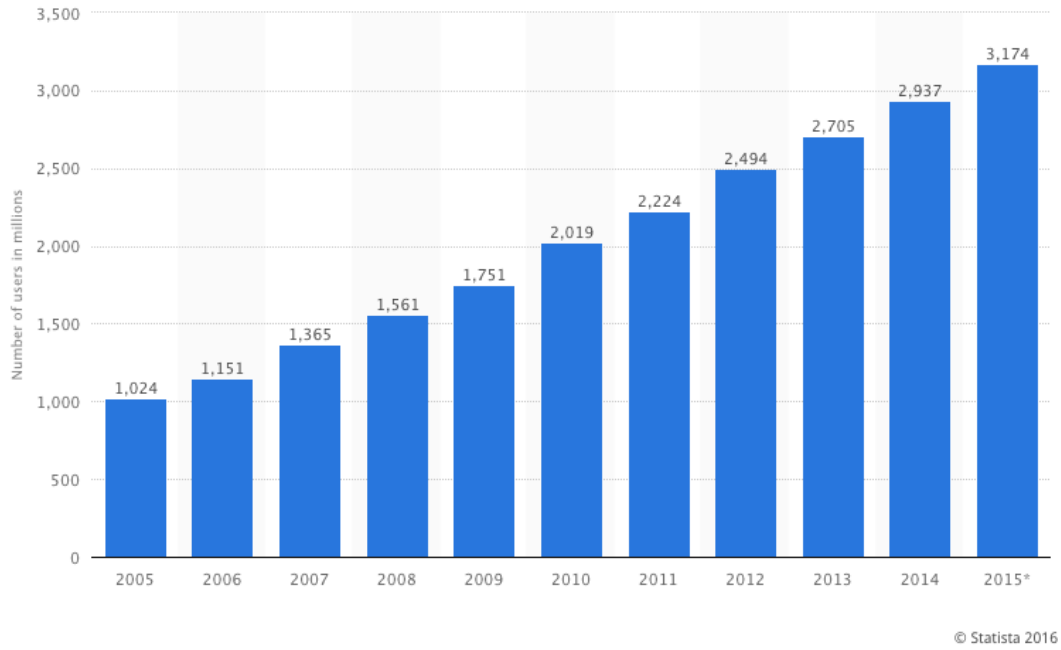
business persons involved in the leisure air travel industry, as it highlights various factors that need to be taken into consideration in order to successfully service their customers. Additionally, it provides some insight on what companies operating an MSP in a large consumer market need to take into consideration in order to be competitive within such an industry, and what are some of the market factors that need to be analysed to remain relevant.

For future research, it could be beneficial to get a larger and more varied selection of the responses from company representatives. This would allow for an even broader view on the entire industry and could give a better change for more anomalies to arise. Also, it could be interesting to conduct a quantitative study from the end consumer side on the how they view that the new possibilities brought on by new digital services within the industry have affected their entire leisure air travel search process, and accordingly, link this to MSP theory.

APPENDICES

Appendix 1:

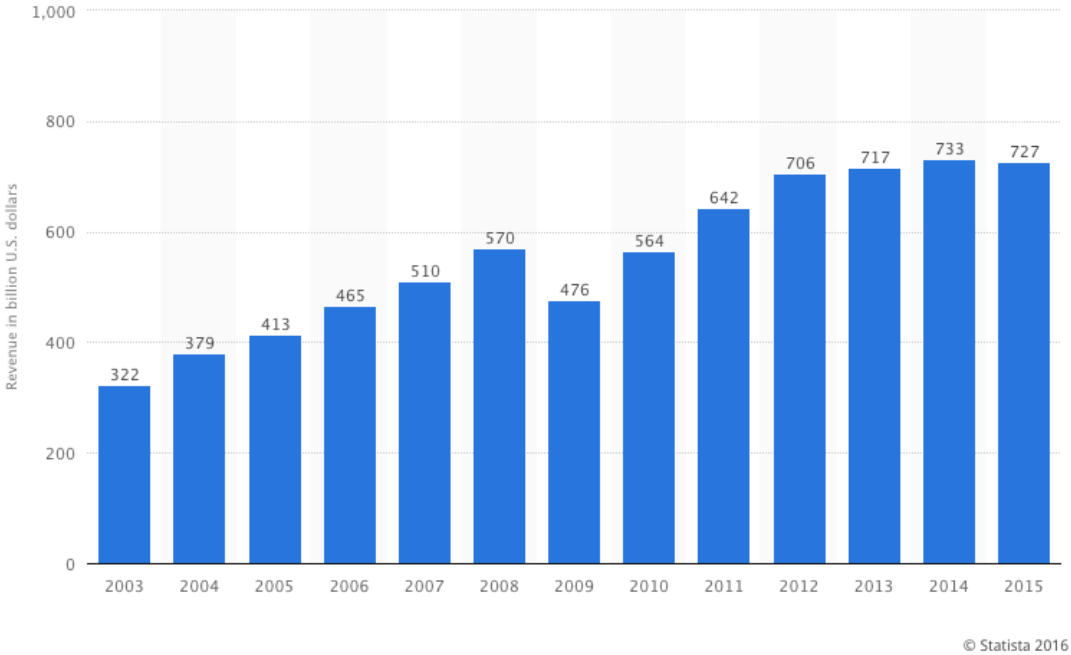
Number of worldwide Internet users from 2000 to 2015 (in millions)



Source: http://www.statista.com/statistics/273018/number-of-internet-users-worldwide/ retrieved 4.2.2016

Appendix 2:

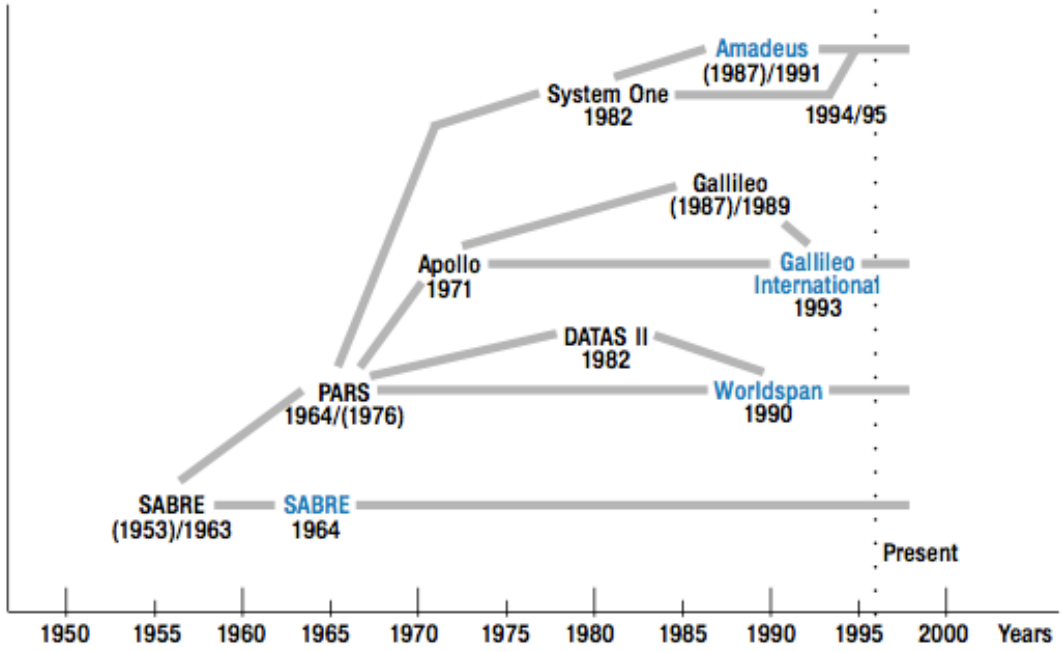
Revenue of commercial airlines worldwide from 2003 to 2015 (in billion U.S. dollars)



Source: http://www.statista.com/statistics/278372/revenue-of-commercial-airlines-worldwide/ retrieved 4.2.2016

Appendix 3:

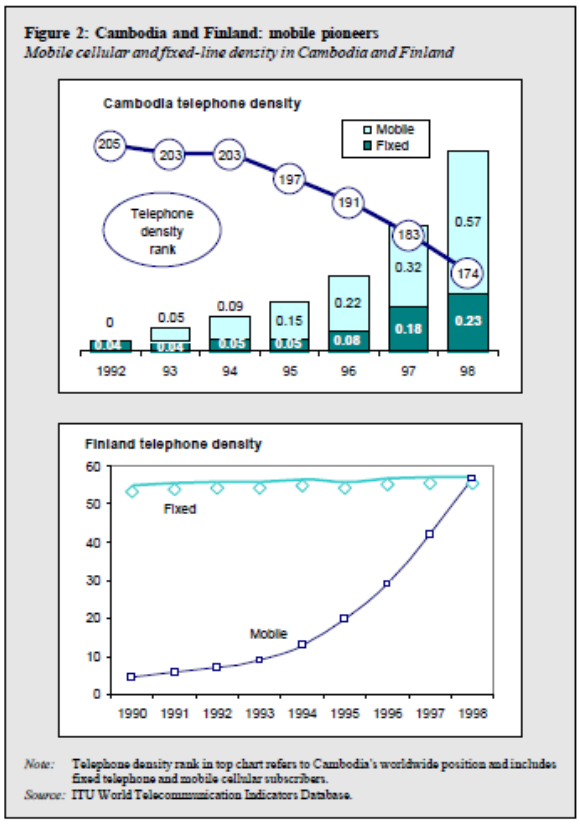
Evolutionary Development in GDS Technology (1950-1996)



Source: Kärcher, Karsten. "The Four Global Distribution Systems in the Travel and Tourism Industry." *Electronic Markets* 6.2 (1996): pg. 20. Print.

Appendix 4:

Cambodia and Finland: Mobile Pioneers



Source: http://www.itu.int/ITU-D/ict/publications/wtdr_99/material/wtdr99s.pdf
(World Telecommunication Development Report 1999 - ITU – page 5)

Appendix 5:

Aalto University School of Business
Master's Thesis for Information and Service Management
Antti Silvennoinen

Title: Has the digitalisation of the leisure air travel search industry been enabled by the characteristics of multi-sided platforms (MSPs)? **Company: Lufthansa**

Phase I (Interviewee's personal profile)

- What is your current job title and how long have you worked at Lufthansa?
- What does your job description entail and what are your main responsibilities within the firm?

Phase II (Lufthansa – processes, partnerships, and business approach)

- How does Lufthansa's flight search/reservation engine work? ie. The customer experience from initial contact to ticket purchase.
- Is the entire process fully owned and controlled by Lufthansa? Or are there third party companies, for example, facilitating the data storage or conducting data analytics?
- How has Lufthansa's flight search/reservation engine developed in the past 20 years?
- What have been the key reasons behind Lufthansa's flight search/reservation engine development projects?
    - Customer and market data related reasons?
    - The utilisation of new emerging technologies?
- How much data/information does Lufthansa share with their Star Alliance partners? For example, regarding new consumer trends or industry developments?
- How much cooperation does Lufthansa do with other Star Alliance partners in the development projects for their search engines (and processes)?
- What kind of relationship does Lufthansa have with the various metasearch services within the leisure air travel search industry?
    - What kind of relationship does Lufthansa have with OTAs?
- What kind of features do Lufthansa buy and utilize from these services?
    - What kind of approaches do Lufthansa take to get visibility within the metasearch websites?
- Does Lufthansa receive any customer behaviour related data from these companies?

- With the emergence of the metasearch services into the industry, how has Lufthansa changed their approach in attracting customers to search and reserve flight tickets directly through their own website?
    - Or is it even relevant to Lufthansa's strategy that customers search flights through their own website?

- Do you see the emergence of metasearch companies as more of a threat or an opportunity for Lufthansa?

- In your opinion, how has the emergence of metasearch engines into the leisure air travel industry changed the way that Lufthansa can receive additional value (ie. not just payment of flight ticket) from its customers?
    - How has it changed for customers who want to receive additional value from Lufthansa?

- Are there aspects where you see that Lufthansa has been slow at adapting to various market pressures?

Phase III (Leisure air travel search industry in general)

- In your opinion, which large-scale technological advancements have had the largest impact on the way that the flight search processes are today?
    - ie. CRS, GDS, Internet, big data analytics, metasearch engines, mobile devices, social media, etc.

- In your opinion, which consumer trends have had the largest impact on the way the flight search processes are today?

- In your opinion, what are the major benefits that the development of technological and digital capabilities have brought...
    - For airlines?
    - For the travelers?

- How important do you see the role of metasearch companies and OTAs in the future development of the leisure air travel search industry?
    - Which do you see as a more important business model (Meta vs. OTA) for the development of the entire leisure air travel search industry? Why?

- In your opinion, what are some of the aspects that traditional airlines need to focus on in order to compete with low-cost carriers? How can airlines utilize technology to reach these goals?

- Where do you see the flight search processes heading in the (near) future?
    - Biggest opportunities for airlines / travellers?
    - Biggest threats for airlines / travellers?

Appendix 6:
Aalto University School of Business
Master's Thesis for Information and Service Management
Antti Silvennoinen

Title: Has the digitalisation of the leisure air travel search industry been enabled by the characteristics of multi-sided platforms (MSPs)?
Company: ***Company A***

This part of the study is focused solely on ***Company A****'s flight search application/service on the* ***Company A*** *platform. Is it possible to use the respondent's name and/or job title in the written analysis of these responses?*

Phase I (Interviewee(s) personal profile(s))

- What is your current job title and how long have you worked at ***Company A***?
- What does your job description entail and what are your main responsibilities within the firm?

Phase II (*Company A*'s processes)

- How does ***Company A***'s flight comparison platform work? *ie. Please briefly describe the entire customer experience from initial contact on your website to the booking of the flight.*
    - Is the entire search process fully owned and controlled by ***Company A***?
    - What kind of revenue models does ***Company A*** have for:
        - Airline companies?
        - For advertisers?
        - Other users of the platform?

- How has ***Company A***'s flight comparison platform developed since its initial creation? ie. What were the initial functions and what have been the major developments thus far?

- What are the key reasons behind ***Company A***'s flight comparison platform development projects?
    - Are they usually customer and market data related reasons?
    - Or the necessity to utilise new emerging technologies?
        - In addition, does ***Company A*** invest in the development of new technological capabilities or are they mostly outsourced?

- How much data/information does ***Company A*** share with their partners?
    - With different flight search companies?
    - With airline companies?
    - Other stakeholders?

- What kind of relationship does ***Company A*** have with the various metasearch services?
    - Does ***Company A*** have any cooperative development projects with other metasearch companies to benefit the entire industry?

- What kind of relationship does ***Company A*** have with various OTAs?

Phase III (The leisure air travel search industry in general)

- How do you see that the entry of metasearch platforms into the leisure air travel search industry has changed the way that airlines attempt to attract customers onto their own website?

- Are there aspects where you see that airline companies have been slow at adapting to various market pressures?

- Do you find that the relationship between airline companies and their end customers / the travellers has changed along the digital evolution of the industry?
    - Has the way that airlines receive additional value from their customers changed?
    - Has the way that customers receive additional value from the airlines changed?

- In your opinion, which large-scale technological advancements have had the largest impact on the way that the flight search processes are today, and why?
    - CRS, GDS, Internet, big data analytics, metasearch engines, social media, mobile devices, etc.

- In your opinion, which consumer trends have had the largest impact on the way the flight search processes are today?

- In your opinion, what are some of the factors that have allowed companies, such as ***Company A***, to enter the flight search industry and prosper?

- How important do you see the role of metasearch companies in the future of leisure air travel search?
    - What do you see as the main differences between metasearch services and OTAs, in regard to providing a service to travellers?
    - Which (meta vs. OTA) do you see as the more important form of business for the future of the industry?

- Where do you see the flight search processes heading in the (near) future?
    - What do you see as the biggest opportunities for airlines, metasearch companies and OTAs?
    - What do you see as the biggest threats for airlines, metasearch companies and OTAs?

Appendix 7:

Lufthansa Annual Report 2015 – Lufthansa Passenger Airlines figures

Lufthansa Passenger Airlines

Lufthansa Passenger Airlines [1]

		2015	2014	Change in %
Revenue	€m	17,944	17,098	4.9
EBIT	€m	904	393	130.0
Adjusted EBIT	€m	970	399	143.1
EBITDA [2]	€m	1,845	1,238	49.0
Employees as of 31.12.	number	40,262	40,199	0.2
Average number of employees	number	40,364	40,608	–0.6
Passengers [3]	thousands	79,305	77,547	2.3
Flights [3]	number	701,404	701,499	0.0
Available seat-kilometres [3]	millions	202,314	197,478	2.4
Revenue seat-kilometres [3]	millions	162,173	156,826	3.4
Passenger load factor [3]	%	80.2	79.4	0.8 pts

[1] Including Germanwings and regional partners.
[2] Without Group-internal profit and loss transfer / investment income.
[3] Previous year's figures have been adjusted.

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